1   IN THE UNITED STATES DISTRICT COURT
             FOR THE EASTERN DISTRICT OF TEXAS
2   MARSHALL DIVISION

3   CONTENTGUARD HOLDINGS, INC.)(Civil Docket No.
)(2:13-CV-1112-JRG
4   )(MARSHALL, TEXAS
     VS.   )(
5   )(
)(NOVEMBER 12, 2015
6   APPLE, INC.   )(1:18 p.m.

7   TRANSCRIPT OF JURY TRIAL

8   BEFORE THE HONORABLE RODNEY GILSTRAP

9   UNITED STATES DISTRICT COURT

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 1                      P R O C E E D I N G S

 2               (Jury out.)

 3               COURT SECURITY OFFICER:  All rise.

 4               THE COURT:  Be seated, please.

 5               Dr. Stefik, you may return to the witness stand.

 6               All right.  Let's bring in the jury, please,

 7   Mr. Nance.

 8               COURT SECURITY OFFICER:  All rise for the jury.

 9               (Jury in.)

10               THE COURT:  Please be seated.

11               Ladies and gentlemen, I want you to know that I

12   didn't give you an hour for lunch, and then I took an

13   hour-and-a-half.  I've been working with the lawyers on

14   things, and it just took longer than I thought.

15               But we're ready to proceed at this time with the

16   cross-examination of the witness by the Defendant.

17               Mr. Pritikin, you may approach the podium and

18   proceed to cross-examine the witness.

19               MR. PRITIKIN:  All right.  Thank you, Your Honor.

20    MARK STEFIK, Ph.D., PLAINTIFF'S WITNESS, PREVIOUSLY SWORN

21                     CROSS-EXAMINATION

22   BY MR. PRITIKIN:

23   Q    Good afternoon, Dr. Stefik.

24   A    Good afternoon, sir.

25   Q    Dr. Stefik, four of your patents are asserted in this
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 1  lawsuit.  You're aware of that?

 2  A    Yes, sir.

 3  Q    And, now, you're still a full-time employee of Xerox;

 4  is that right?

 5  A    Xerox PARC, yes, sir.

 6  Q    All right.  And you've worked for Xerox PARC since

 7  1980?

 8  A    That is correct.

 9  Q    When ContentGuard was formed in 2000, you stayed at

10  Xerox PARC and did not go to ContentGuard, correct?

11  A    Yes.

12  Q    And the other co-inventors on your patent, Dr. Pirolli

13  and Dr. Merkle, also did not join ContentGuard?

14  A    Correct.

15  Q    Is it correct that if ContentGuard is awarded money in

16  this case, that you're not going to get a share of it?

17  A    That's correct, sir.

18  Q    Is it also correct that all four of the patents that

19  are asserted in this lawsuit have now expired?

20  A    I believe that's true, sir.

21  Q    I think you said on direct examination this morning

22  that the lawyers had drafted the claims.

23       Do you recall that testimony?

24  A    Yes, sir.

25  Q    But, in fact, it's also true, is it not, that you were
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 1   not asked to review those claims while they were being

 2   drafted and before they were submitted to the Patent Office;

 3   isn't that correct?

 4   A    Yes, sir.

 5   Q    Now, you don't claim to have invented all the ways that

 6   digital rights management can be performed, do you?

 7   A    That's correct, sir.

 8   Q    And other ways of doing digital rights management were

 9   in existence before your patents?

10   A    Yes, sir.

11   Q    In fact, you're aware of many different approaches to

12   digital rights management; isn't that also true?

13   A    Yes, sir.

14   Q    I think you talked about it this morning, but the

15   critical aspects of your patented digital rights management

16   system are repositories and usage rights, correct?

17   A    Trusted repositories, yes, sir.

18   Q    Trusted repositories and usage rights that are attached

19   or treated as attached to the digital works?

20   A    Yes.

21        MR. PRITIKIN:  Let's pull up Exhibit No. 8, which

22   I believe is the '072 patent, Mr. Simmons.

23        And let's turn in that to --

24   Q    (By Mr. Pritikin) And by the way, Dr. Stefik, you have

25   a notebook there that we've given you that has copies of
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 1  these.  So it may be just as easy to see what we need to on

 2  the screen, but if for any reason you feel you need to look

 3  at the paper document, just let us know.

 4              MR. PRITIKIN:  Let's turn to Column 2, Line 13.

 5  Q    (By Mr. Pritikin) And one of the techniques that you

 6  had described in the background of -- one of the techniques

 7  you described here in this section, an old technique, was to

 8  use encryption to lock up a work and then to require a user

 9  to pay for a copy of the key to unlock it, correct?

10  A    So -- sorry.  I'm just turning to the right page.  So

11  it's Column 2, Line 13?

12  Q    Yes, sir.

13  A    I'm there.

14  Q    And do you see that one of the old techniques described

15  there is using encryption to lock up a work and then to

16  require a user to pay for a copy of the key to unlock the

17  work?

18  A    Yes.

19  Q    And that's the secure container approach?

20  A    That's one -- that's one secure container approach,

21  yes, sir.

22  Q    By 1994, when you did your work, one of the tools for

23  digital rights management that was known was encryption or

24  cryptography -- cryptography, correct?

25  A    Yes.
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 1   Q     And you didn't invent encryption?

 2   A     No, sir.

 3   Q     And you didn't invent the idea of encryption and

 4   decryption keys?

 5   A     No, sir.  I worked with Ralph Merkle.

 6   Q     And you didn't invent the idea of using encryption keys

 7   to control the use of digital content either, did you?

 8   A     I'm not sure that -- it depends on, sir, what you mean

 9   exactly.

10           MR. PRITIKIN:  Let's look back at AX-8 -- or let's

11   look at -- yes, AX-8.  Can we pull up that, Mr. Simmons?

12   Q     (By Mr. Pritikin) And you see this is the Nguyen '053

13   patent, sir?

14   A     Yes.

15   Q     And you understand that's one of the patents asserted

16   in this case, but not the one on which you are named as an

17   inventor.

18   A     That is correct, sir.

19   Q     Let's turn to Column 2, Line 4.

20   A     Okay.

21   Q     And you see this is where the patent talks about your

22   trusted system approach?

23   A     Sir, it talks about a trusted system approach.  I'm

24   happy to establish this thing is not --

25   Q     And it explains that in a trusted system approach, the
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 1   entire system is responsible for preventing unauthorized use

 2   and distribution of the document?

 3   A    I would agree with that, sir.

 4   Q    Now, let's look a little further down at Line 9.  Let's

 5   look at Lines -- a little further down to beyond that, 9 --

 6   Lines 9 through -- you see the section beginning at Line 9

 7   where it's talking about the trusted system approach?

 8        And it says:  While building tamper-proof trusted

 9   systems is a real challenge to existing technologies,

10   current market trends suggest that open and untrusted

11   systems, such as PCs and workstations using browsers to

12   access the web, will be the dominant systems used to access

13   digital works.

14        Do you see that?

15   A    I do see it.

16   Q    And you have no reason to disagree with that, sir?

17   A    Mostly I agree with it, sir.

18   Q    And then it goes on to say:  In this sense, existing

19   computing environment -- environments such as PCs and

20   workstations equipped with popular operating systems, e.g.,

21   Windows, Linux, and UNIX, and rendering applications such as

22   browsers are not trusted systems and cannot be made trusted

23   without significantly altering their architectures.

24        Now, you understand, when this statement was made to

25   the United States Patent and Trademark Office in this
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 1   patent, there was a duty of candor that governed submissions

 2   to the Patent Office?

 3   A     I believe that's true, sir.

 4   Q     And the "duty of candor" means that when you make

 5   statements to the Patent Office in a patent application, you

 6   have to tell the truth, right?

 7   A     I believe that's true, sir.

 8   Q     So you had no reason to believe that when these

 9   statements were made on behalf of ContentGuard to the Patent

10   Office that they were not truthful?

11   A     I believe they're trying to be truthful, sir.

12   Q     Now, the invention that you made consisted of ideas

13   that you wrote down and that you put on paper at the time,

14   correct?

15   A     Yes, sir.

16   Q     Before you filed your patent application, you never

17   actually built a working digital rights management system?

18   A     That's correct, sir.

19   Q     And it is also correct, isn't it, that you're not aware

20   of a single product that Xerox launched based on your

21   invention that was commercially successful?

22   A     I don't know, sir.  I know they were built.  I'm not

23   sure how successful they were.

24   Q     Well, in the real world, the idea that you had for

25   trusted systems for digital rights management is fraught
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 1   with many practical problems, isn't it, sir?

 2        You would agree with that?

 3   A    Can you say the question, again, sir, please?

 4   Q    Sure.

 5        In the real world, the idea that you had for trusted

 6   systems for digital rights management is fraught with many

 7   practical problems?

 8   A    I think that's true for any approach to DRM, sir.

 9   Q    Now, you said this morning in response to one of

10   Plaintiff's counsel's question that you thought it would

11   take work to build a trusted system like the one that you

12   invented but that it could be done.

13        Do you recall testimony along those lines?

14   A    Yes, sir.

15   Q    And is one example, I think I heard you say, that

16   ContentGuard had done it?

17        Do I recall that correctly?

18   A    ContentGuard had done so, yes, sir.

19   Q    Now, you never worked for ContentGuard, right?

20   A    No.  I worked with ContentGuard -- excuse me.  I worked

21   with the people who formed ContentGuard, but before they

22   formed it, sir.

23   Q    Yeah, so that if ContentGuard had built some type of

24   product that used your invention, you weren't there

25   personally involved in it, were you?
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 1  A     That's correct, sir.

 2  Q     And you are aware, aren't you, that there is only one

 3  commercial product that has ever been built by ContentGuard

 4  that supposedly used your patents?

 5  A     Sir, I don't know about that.

 6  Q     And that they -- that product, after making a few

 7  hundred thousand dollars in sales, was discontinued?

 8        Are you aware of it?

 9  A     No, sir.  I don't know.

10  Q     First time you heard it is this afternoon?

11  A     That's correct, sir.

12  Q     Let's look back again at the '053 patent, PX-8.  And

13  could you turn to Column 2, Lines 6 to 10?

14           And ContentGuard wrote in this patent:  Building a

15  trusted system usually entails new hardware, such as a

16  secure processor, secure storage, and secure rendering

17  devices.  This also requires that all software applications

18  that run on trusted systems be certified to be trusted.

19           Again, you have no reason to believe that

20  ContentGuard was being anything other than truthful when it

21  made these statements, do you?

22  A     I believe they were trying to be truthful, sir.

23  Q.    Could you turn, please, in your notebook, Dr. Stefik,

24  to Exhibit AX-145?

25           And do you see this is an article that is entitled
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 1  "Self Protecting Documents"?

 2  A.   Yes, sir.

 3  Q.   And it was written by people who were at Xerox

 4  Corporation who worked with you, wasn't it?

 5  A.   That's correct.

 6  Q.   And it's dated May 30th, 1997?

 7  A.   Yes.

 8  Q.   Now, that's just a couple of years after you had filed

 9  your patent application, right?

10  A.   Looks like it's three years, sir.

11  Q.   Now, you knew all three of these people because they

12  worked with you, correct?

13  A.   That's correct.

14  Q.   They were working on digital rights management at Xerox

15  PARC along with you?

16  A.   No.   They were working in the Ednovo Technology Center,

17  sir.

18  Q.   They worked for Xerox, though, and they worked on

19  digital rights management?

20  A.   Yes, sir.

21  Q.   So they were at a different location, but you

22  interacted with them; is that fair to say?

23  A.   That's correct, yes.

24  Q.   Now, all three of them were familiar with the trusted

25  system that you came up with, weren't they?
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 1  A.    We certainly worked together.  They -- they were
 2  reasonably familiar, sir.
 3  Q.    Well, Mr. Ta, Thanh Ta, one of his responsibilities at
 4  Xerox was to try to build a prototype of your DRM system,
 5  your trusted system; isn't that right?
 6  A.    That's my understanding, sir.
 7  Q.    And Dr. Ram was a team leader for Xerox?
 8  A.    That is the question, sir, yes.
 9  Q.    And he also was familiar with your invention because
10  his team was building technology around it, correct?
11  A.    That's correct, sir.
12  Q.    Now, we looked at some slides this morning, and we're
13  going to come back to those a little later, but there was a
14  point in time around this time where you made a trip to
15  New York with Dr. Ram to try to explain your invention to
16  book publishers, right?
17  A.    That's right, sir.
18  Q.    The two of you spent a couple of weeks in New York
19  talking to people, trying to explain what it was that you
20  had come up with?
21  A.    I'm not sure how long it was, one week, two weeks, but
22  it was -- that's about right.
23  Q.    But it's fair to say that Dr. Ram understood what you
24  had done?
25  A.    Certainly.
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 1   Q.   Let's turn to Page 4 of the article, and let's look

 2   down -- under Related Work, there's a sentence:  To date,

 3   there are too broadly -- there are broadly two technical

 4   approaches.

 5        Do you see that paragraph, Dr. Stefik?

 6   A.   I do.

 7   Q.   And do you see that your colleagues at Xerox wrote:  To

 8   date, there are broadly two technical approaches; namely,

 9   the secure container approach.  And then they cite various

10   things.  We're going to come back to those.  And the trusted

11   system approach, they cite things there.

12        Do you see that language?

13   A.   I do.

14   Q.   Now, let's look down and see how they describe the

15   secure container approach.

16           MR. PRITIKIN:  Can you go down a little further in

17   that paragraph?

18   Q.   (By Mr. Pritikin) And do you see where it starts:  In

19   the secure container approach?

20   A.   Yes.

21   Q.   And you see there they have a description of the secure

22   container approach along the lines that you've talked about

23   already?

24   A.   I see everything you've got on the screen here.  I'm

25   just reading it.
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 1         So I'm through the end of the paragraph.  It looks like

 2    that's what you're covering, sir.

 3    Q.    All right.  And now, if we go back up, let's focus on

 4    the examples they give of the secure container approach.

 5              MR. PRITIKIN:  A little higher.  It's the sentence

 6    we looked at earlier.

 7    Q.    (By Mr. Pritikin) You see the examples they give are

 8    Griswold 1994, IBM Cryptolope, InterTrust DigiBox.

 9         Do you see that?

10    A.    I do.

11    Q.    And were you familiar with those three systems, or had

12    you heard of them?

13    A.    Yes.  I'm more familiar with some of the others, but

14    yes.

15    Q.    Cryptolope was a commercial system, wasn't it, that was

16    developed by IBM?

17    A.    It's Cryptolope, sir.

18    Q.    Cryptolope?

19    A.    And it was a commercial system.

20    Q.    And the Griswold 1994, there are actually some

21    references in this document, and if you turn to Page 22, we

22    can see what they are.

23              MR. PRITIKIN:  Let's go to Page 22, and let's look

24    at No. 5 there.

25    Q.    (By Mr. Pritikin) And you see this is a reference to
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 1   Gary Griswold?

 2   A.    Yes, sir.

 3   Q.    It's an article that he published.  You were familiar

 4   with that article, weren't you?

 5   A.    Yes, I was.

 6   Q.    And that article described a secure container system?

 7   A.    I'm thinking for a second, sir, about the definition.

 8   Q.    Well, let me ask the question this way, Dr. Stefik:

 9   Your colleagues at Xerox classified this as a secure

10   container approach, correct, in this article?

11   A.    That's what they say, yes, sir.

12   Q.    You're aware that Mr. Griswold also filed a patent

13   application on his system, are you not?

14   A.    Yes, sir.

15   Q.    And that's because you actually talked about that in

16   your own patent as prior art in the background section of

17   the patent, correct?

18   A.    I believe that's correct, sir.

19   Q.    Now, the Griswold system did not rely on usage rights

20   that are attached or treated as attached to digital works,

21   did it?

22   A.    Griswold system, that's correct, sir.

23   Q.    Now, let's go back to the examples of the trusted

24   systems that are in this article, and let's look at the

25   three examples that are highlighted there.  And you see that
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 1  your colleagues at Xerox gave examples of three trusted

 2  systems here.

 3       One is Stefik 1995.  That's you, right?

 4  A.   I am Stefik.  I'm not sure what this 1995 article is,

 5  but I know what my systems were.

 6  Q.   All right.  And -- well, let's go back to Page 22 and

 7  see what they were talking about.  And if we go down to

 8  No. 11 in the reference section, they're referring -- that's

 9  you, and that's an article that you prepared called "Letting

10  Loose the Light"?

11  A.   Yes, sir.

12  Q.   And the draft version, they're citing is in 1995?

13  A.   That's good, sir.

14  Q.   And that's an article that you wrote shortly -- you

15  began work on it shortly after you filed the patent

16  application, and it was s way of describing what you had

17  done; is that fair to say?

18  A.   That's correct, sir.

19  Q.   In fact, the first draft of this you started on was

20  just s couple of weeks after you had filed the patent

21  application in 1994, correct?

22  A.   That sounds about right, sir.

23  Q.   Now, let's go back to Page 4, and let's take a look at

24  the other two that are here.

25       Now, according to your colleagues who were working at
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 1   Xerox, there were two other systems -- examples of trusted

 2   systems that were done earlier than you, correct?

 3   A.    These -- that's what they said, sir, yes.

 4   Q.    So one of them is Tygar and Yee, 1994, and the other is

 5   White, 1987.

 6         Do you see that?

 7   A.    I do.

 8   Q.    Let's take each of these.  Let's look first at what is

 9   White, 1987.  Let's go back to Page 22 and see what the

10   reference is.

11   A.    Okay.

12   Q.    And do you see the reference is to S.R. White, ABYSS:

13   A Trusted Architecture for Software Protection?  And the

14   publication is dated April of 1987.

15         Do you see that?

16   A.    Yes, sir.

17   Q.    Now, you know that Dr. White at the time was a

18   scientist who worked for IBM and that he designed the ABYSS

19   Trusted System, correct?

20   A.    I do know that, sir.

21   Q.    And are also aware, are you not, sir, that Dr. White

22   will be testifying in this case as an expert witness for

23   Apple?

24   A.    I just learned that, sir.

25   Q.    Let's go back again to Page 4 and look at the third of
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 1  the trusted systems that are cited here.

 2       And you see the third one is Tygar and Yee, 1994?

 3  A.   Yes.

 4  Q.   All right.  Let's go back, again, to Page 22 to see

 5  what that is.  And if we look at the references, we see that

 6  it refers to an article published by Dr. Tygar and Dr. Yee

 7  describing a trusted system for digital rights management

 8  that they called Dyad.

 9       Do you see that?

10  A.   I see that, sir.  I don't know that they characterized

11  it as trusted systems, but I do see the reference.

12  Q.   Well, your colleagues at Xerox characterized it as a

13  trusted systems, didn't they, sir?

14  A.   Correct, sir.  You don't -- keep saying that, but I --

15  Q.   All right.

16  A.   -- maybe I should understand that that's what you mean.

17  Q.   And you were familiar with Dyad, weren't you?

18  A.   I knew about it, sir.

19  Q.   You knew about it before you filed your own patent

20  application?

21  A.   Yes, sir.

22  Q.   Now, the publication here was dated January of 1994, so

23  that, too, was before your patent, right?

24  A.   The publication is 1997, sir, "Self-Protecting

25  Documents."
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 1   Q.    I'm sorry.  I -- I didn't mean to -- if you look at

 2   Reference 12, the Tygar and Yee article, you see that was

 3   published in January of 1994?

 4   A.    Yes, sir.

 5   Q.    Okay.  Now, let's go back again to the page that we

 6   were looking at where these are all listed.

 7         And it's fair to say, isn't it, that your colleagues at

 8   Xerox believed that both Tygar and Yee and White, which were

 9   before your invention, described trusted systems?  Isn't

10   that correct, sir?

11   A.    That's how they're characterizing them here, sir, yes.

12   Q.    And that means that you weren't the first person to

13   think of a trusted system, because what it was that Tygar

14   and Yee had done and White had done was done first.

15   A.    That's by their definition, sir, yes.

16   Q     Now, let's go down and see what your colleagues said

17   about trusted systems on Page 4.  And I want to go a little

18   further down on the page.

19              MR. PRITIKIN:  Yes, that's the paragraph.

20   Q     (By Mr. Pritikin) I've highlighted it here.  And I

21   don't know if you're following along on the text, some of

22   this is easy to read on the screen.

23         They wrote:  While trust is not black and white but

24   rather a continuum, it cannot be achieved without being

25   invasive, without the introduction of new hardware, and
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 1   without necessitating new processes for certification of

 2   these systems.  The concept of trusted systems to protect

 3   documents is fraught for a number of reasons.

 4        Do you see that language?

 5   A    I do, sir.

 6   Q    By the way, did you see this article?  Have you seen it

 7   before today?

 8   A    I'm not sure, sir.  I think I remember that they were

 9   working on this at a time when they were trying to develop

10   this competing approach called self-protecting documents.

11   Q    And this was after they had already tried to prototype

12   your system?

13   A    I believe that's true, sir.

14   Q    Okay.  Now, then they have some numbered points

15   underneath that.  Do you see Nos. 1 through 6?  It carries

16   over from Page 4 to Page 5.

17   A    Yes.

18   Q    And this is under the number of reasons why it's

19   fraught.  Let's look at a couple of those.  And let me

20   direct your attention to No. 2.

21   A    Okay.

22   Q    And you see what they wrote there is that "the trusted

23   systems are difficult and may be impossible to build.  All

24   literature in the computer security field emphasizes the

25   futility of building trusted systems on top of open
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 1  operating systems."

 2       Do you see that?

 3  A    I do.

 4  Q    And then let's look down at No. 3.  And let's see what

 5  they wrote here.

 6       Do you see they wrote:  Trusted systems, even if built,

 7  can protect documents only to the extent that the

 8  applications that run on these systems are also trusted;

 9  this, then, requires that all applications that run on

10  trusted systems be certified to be trustworthy?

11       Do you see that?

12  A    I see it.

13  Q    And then let's jump down to No. 5.  And do you see what

14  they wrote about trusted systems here?

15       They said:  They are difficult to maintain.  Given the

16  whole range of platform -- of different platforms, such as

17  PCs with different operating systems, Macs, and a variety of

18  UNIX machines, building trusted systems requires a complete

19  integration with the low-level operating system details.

20       Since operating systems are constantly evolving,

21  trusted systems have to keep pace with every new release of

22  individual operating systems.

23       And you see they wrote that?

24  A    Yes, sir.

25  Q    And then let's look at Paragraph 6.  And you see in
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 1   Paragraph 6, they wrote:  They are difficult to gain market

 2   acceptance, and there are a number of factors that obstructs

 3   the market acceptance of trusted systems.

 4        Do you see that?

 5   A    Yes, sir.

 6   Q    Now, at the time, it's likely they shared a copy of

 7   this article with you, isn't it, Dr. Stefik?  You were

 8   working together?

 9   A    We were working together.  Sir, my attention was on

10   other things mostly by then, but they probably did share it

11   with me.

12   Q    In fact, it was fairly common for you and some of the

13   colleagues like Dr. Wang to share drafts of articles you

14   were writing, isn't it?

15   A    That's correct.

16   Q    Okay.  Now, do you recall ever telling Dr. Ram, Mr. Ta,

17   Dr. Wang:  You're wrong; you don't understand trusted

18   systems; they don't have these problems?

19        Did you ever tell them that?  Do you recall saying that

20   to them, Dr. Stefik?

21   A    Sir, I don't remember conversations we had around this

22   document -- around this document.  I do recall that I was in

23   disagreement with -- about some of its features, but that

24   was a long time ago.

25             MR. PRITIKIN:  We can take that down, Mr. Simmons.
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 1  Q     (By Mr. Pritikin) Now, you're aware of this lawsuit,

 2  that Apple contends -- you were here for the opening

 3  statements.  You are aware that Apple contends that in its

 4  digital rights management system, that usage rights are not

 5  attached or treated as attached to digital works like books

 6  and movies, correct?

 7  A     I heard that this morning, sir.

 8  Q     But you're not offering opinions on infringement,

 9  right?

10  A     I'm not here as an infringement witness, sir.

11  Q     Right.

12        Now, in your patent, you said that it is a key feature

13  of the invention that the usage rights are attached to a

14  digital work, didn't you?

15  A     Attached or treated as attached, sir.

16  Q     Well, the words used in the patent were "attached,"

17  right?

18  A     That's correct, sir.

19  Q     But that included "attached" or "treated as attached,"

20  in your mind?  Is that what you're saying?

21  A     Includes it in the Court's construction of the claims,

22  sir.

23  Q     Now, in your invention, copies that are made of a

24  digital work will also have usage rights that are attached

25  to them, right?
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 1  A     Again, I don't want to have to say "attached" or

 2  "treated as attached," sir.  So I'll, as a blanket way, say

 3  yes to questions like that.

 4  Q     In fact, if we -- in your patent, you said that the

 5  usage rights are attached directly to the digital works,

 6  didn't you?

 7  A     That's probably true, sir.

 8  Q     Let's take a look at the patent.

 9            MR. PRITIKIN:  Let's pull up the '072 patent,

10  which I think is AX-8 -- excuse me -- AX-4.  And let's turn

11  to Figure 1 of the patent.  Can we do that?

12  Q     (By Mr. Pritikin) And do you see that Figure 1 of the

13  patent is a high-level flowchart that demonstrates the basic

14  operation of your invention?

15  A     Let me be sure I understand.  You said this is AX-08?

16  Q     I'm sorry.  AX-04.

17  A     Okay.  Yes.

18  Q     And in Figure 1, if we look at the first box at the

19  top, what happens there is that the creator creates a

20  digital work, right?

21  A     Yes, sir.

22  Q     And then if we look at the second box, is that the

23  usage rights are attached to the digital work and it's

24  deposited in Repository 1, right?

25  A     That's right.
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 1   Q     So in this figure from your patent, the usage rights

 2   are attached to the digital work after it's created but

 3   before it's deposited into the first repository, right?

 4   A     That's correct, sir.

 5   Q     And this figure appears in all of the ContentGuard

 6   patents that name you as an inventor, right?

 7   A     I believe that's true.

 8   Q     Now, would you turn over to Column 10, Line 46.  Let me

 9   go first -- let's go to Column 8.  It may be easier.

10   Column 8, and let's look at Line 40.  This is a section in

11   your patent on the structure of digital works.  It's

12   Column 8, Line 40.

13   A     Okay.

14   Q     And you see the first sentence in the section on the

15   structure of digital works says:  Usage rights are attached

16   directly to digital works.

17         Do you see that?

18   A     I do.

19   Q     Now, let's go over to Column 10.  And here you have a

20   section in Column 10 -- a whole section on attaching the

21   usage rights to a digital work.

22         Do you see that?

23   A     I do.

24   Q     Now, we're going to come back to the patent in just a

25   moment, but I want you to turn, if you would, please, to a
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 1  different exhibit, which is PX-29.08.

 2        And these are some slides that you prepared, right?

 3  A     I made these slides.

 4  Q.    These were prepared in connection with -- you talked

 5  about them earlier today -- the trip you had made to visit

 6  the people who might potentially be interested in your

 7  system.

 8  A.    They were used for several things, sir, including that.

 9  Q.    All right.  And this is the set you prepared with

10  Dr. Ram?

11  A.    He worked on it, too, yes.

12  Q.    These were prepared -- it's undated, but is it your

13  best estimate it would have been in '96 or '97, '95?

14  A.    Well, that's certainly the right time period.  I don't

15  know exactly when.

16  Q.    Let's turn to Page 30076 of this document.  And on this

17  slide, you captioned Usage Rights For Digital Documents,

18  Overview of the Approach.

19        Do you see that?

20  A.    I can't -- I can't find the document.  I'm just going

21  to have to use the screen for a bit, sir.

22  Q.    Yeah.  That's fine to look at the screen, but, please,

23  if you -- if you can't read it or need the document, just

24  tell us.

25        And do you see that the document is captioned Usage
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 1   Rights For Digital Documents?

 2   A.    What was the question, sir?

 3   Q.    First question is just do you see that's the caption,

 4   Usage Rights For Digital Documents?

 5   A.    Absolutely.  Sorry.  Yes.

 6   Q.    And it's an overview of the approach.

 7         Do you see that?

 8   A.    That's right.

 9   Q.    Now, I want to direct your attention to the second

10   bullet point.  And in this bullet point, you wrote:

11   Representations of usage rights that travel with a digital

12   document.

13         Do you see that?

14   A.    I do.

15   Q.    Now, we heard Plaintiff's counsel argue that in your

16   system, the usage rights don't travel with the document, but

17   you used the word "travel," didn't you, sir, in this

18   document?

19   A.    Yes.  This is a teaching document, sir, but yes.

20   Q.    But you used the word in this document that the usage

21   rights that travel with a digital document.  Those were your

22   words, weren't they, Dr. Stefik?

23   A.    Those are my words, sir.

24             MR. PRITIKIN:  Is it possible for us to pull up --

25   we can take this down.  Is it possible for us to pull up one
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 1   of the slides that was used by the Plaintiffs in the

 2   questioning this morning of Dr. Stefik?  Could we put up

 3   Slide -- Demonstrative 15?

 4   Q.   (By Mr. Pritikin) Now, this was an example that you

 5   gave this morning, and I think if I heard you correctly,

 6   Dr. Stefik, you said that in this example, the one at the

 7   bottom, you have the content at Location B.

 8        You have the usage rights at A.  And they seem to be

 9   going separately to the little phone on the right.  Was

10   that -- was my take on that correct?  Is that what you were

11   saying, sir?

12   A.   Yes, sir.

13   Q.   And you said that this was part of what you had had in

14   mind, right?

15   A.   I said it was possible for the invention, sir.

16   Q.   Now, the slide we're looking at was not a part of your

17   patent; isn't that correct?

18   A.   That's correct.

19   Q.   This is the slide that was prepared in 2015 for

20   purposes of this lawsuit?

21   A.   That's my understanding, sir.

22   Q.   And instead of actually showing us something in the

23   patent where you have these things traveling separately like

24   that, you helped prepare this demonstrative in 2015 to say

25   that they could travel separately.  Is that a fair
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 1   characterization?

 2   A.   Yes, sir.

 3             MR. PRITIKIN:   We can take that down.  Let's turn

 4   next to PX-23.01.

 5   Q.   (By Mr. Pritikin) And do you recognize this as a -- one

 6   of the drafts of the article that you prepared called

 7   "Letting Loose the Light"?

 8   A.   I do, sir.  I'm having trouble finding these things in

 9   here, but I'll just have to go along with your stuff for a

10   while.

11   Q.   All right.  You may well be able to see it on the

12   screen.

13        And -- and do you see that -- you started work on this

14   article in December of 1994?

15   A.   Sounds right.

16   Q.   And this particular draft was dated March of 1995?

17   A.   Correct.

18   Q.   And you recall the "Letting Loose the Light" article

19   was the article that was cited by your colleagues as the

20   example of the trusted system in the article we looked at

21   earlier?

22   A.   I believe that's correct, sir.

23   Q.   The article describes the same work that led to your

24   patent application, doesn't it?

25   A.   Yes, it does, sir.
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 1              MR. PRITIKIN:  And could we turn over to Page 10

 2    of the article?

 3    Q.    (By Mr. Pritikin) And do you see at this section, you

 4    have a section in the article on attached usage rights?

 5    A.    Yes, sir.

 6    Q.    And you started the section with an analogy.  Do you

 7    see that?

 8    A.    Yes.

 9    Q.    And what you said is:  When we go to a store to buy a

10    shirt, there are various tags attached to it.  One kind of

11    tag is a price tag.

12    A.    Yes, sir.

13    Q.    If we want to buy the shirt, we must pay the amount on

14    the tag.  Other tags give cleaning instructions.  They say

15    to wash by hand in cold water or to dry clean only?

16    A.    Yes, sir.

17    Q.    Do you see that language?

18    A.    Yes.

19    Q.    And then you went on to say now:  This is roughly the

20    idea for usage rights on digital works.  Digital works come

21    with tags on them.

22          Do you see that?

23    A.    Yes, sir.  It says it's roughly the idea, sir.

24    Q.    And you said that the tags are put there by creators,

25    publishers, and distributors and that the tags describe the
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 1   usage rights for the digital work, what can be done with it,

 2   and what it costs.

 3        Do you see that?

 4   A.   Yes, exactly.  Yes.  Okay.

 5   Q.   And so you were analogizing the usage rights that are

 6   attached or treated as attached for the digital works to the

 7   tags that we have on items of clothing in the article,

 8   right?

 9   A.   That's right.

10   Q.   Now, the other core feature of your system, I think you

11   said, is repositories, right?

12   A.   That's correct.

13   Q.   And the way that your invention works is that the

14   digital works are stored in repositories, correct?

15   A.   That's part of it, sir, yes.

16   Q.   Well, they are stored in repositories, aren't they,

17   sir?

18   A.   Oh, I'm not denying that, sir, they are.

19   Q.   All right.  And the repositories enforce the usage

20   rights for digital works, correct?

21   A.   Absolutely, sir.

22   Q.   Now, let's look back at the '072 patent, which is AX-4.

23   And this time I'd like to direct your attention to Column 4,

24   Line 26.

25        And you see at Column 4, Line 26, in your patent, you
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 1   wrote --

 2   A.    I found it, sir, yes.

 3   Q.    -- you wrote:  Digital works are stored in

 4   repositories?

 5   A.    Yes, sir.

 6   Q.    Repositories enforce the usage right for digital works.

 7   A.    Yes, sir.

 8   Q.    That's the way you describe it?

 9   A.    Yes, sir.

10   Q.    Let's turn over next to Column 6, Line 35.

11         And in this point, you said:  The digital work genie

12   only moves from one trusted bottle, paren, repository, to

13   another, and all uses of copies are potentially controlled

14   and billable.

15         And that's a fair description of your invention as

16   well, isn't it?

17   A.    That's correct, sir.

18   Q.    And then if we look down at Line 45, you wrote:  The

19   digital work remains securely in Repository 1 until a

20   request for access is received.

21         Do you see that?

22   A.    Yes.

23   Q.    And I think you said earlier that you actually were

24   involved in writing this part of the patent, the written

25   description of the specification, the part that comes before
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 1  the claims.

 2  A.    Yes.

 3  Q.    You understand that the repository, for purposes of --

 4  of your invention, has to have the three integrities --

 5  A.    That's correct, sir.

 6  Q.    -- physical, communications, and behavioral integrity.

 7  A.    Yes, sir.

 8  Q.    And if it's missing any of those, it's not a repository

 9  for purposes of your patent, is it?

10  A.    That's correct, sir.

11  Q.    Now, your idea for physical integrity was that it would

12  protect against physical threats like someone -- the example

13  you've given is like trying to drill into a phone, correct?

14  A.    That's an example, sir.

15  Q.    Again, you didn't invent the idea of physical integrity

16  in devices, did you?

17  A.    No, sir.

18  Q.    Now, if we look at Column 12, Line 10, and you see you

19  wrote there that repositories never allow non-trusted

20  systems to access the works directly.

21  A.    That's correct, sir.  It says that.

22  Q     And then you wrote:  A maker of generic computer

23  systems cannot guarantee that their platform will not be

24  used to make unauthorized copies.

25        And that was another statement that you had made to the
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 1   Patent Office when you were applying for this patent.

 2   A    Yes, sir.

 3   Q    Now, communications integrity protects against someone

 4   trying to tap into the line or tamper with it while it's in

 5   transit, correct?

 6   A    It's more than that, sir, but yes.

 7   Q    And it would be fair to say that you did not invent the

 8   idea of communications integrity?

 9   A    I don't know if anybody else called it that, sir, but

10   it existed before -- before me.

11   Q    Finally, behavioral integrity requires the software to

12   include a digital certificate in order to be installed in a

13   repository, right?

14   A    Yes, sir.

15   Q    And you'd agree that behavioral integrity protects

16   against viruses or the installation of programs that are

17   unsafe?

18   A    Yes, sir.

19   Q    Because they might corrupt your digital rights

20   management system?

21   A    It's more than that, sir, but I agree it does that.

22   Q    Let's look again at your patent, and let's look this

23   time at Column 12, Line 46.

24        And you wrote here:  Behavioral integrity is maintained

25   by requiring that repository software be certified and be
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 1   distributed with proof of such certification, i.e., a

 2   digital certificate.

 3        Do you see that?

 4   A    I do.

 5   Q    And that the purpose of the certificate is to

 6   authenticate that the software has been tested by authorized

 7   organizations which attests that the software does what it's

 8   supposed to do and that it does not compromise the

 9   behavioral integrity of a repository.

10   A    Is there a question there, sir?

11   Q    Yeah.  Do you see that?

12   A    That's what it says.

13   Q    And that was your idea of behavioral integrity as you

14   described it in the patent?

15   A    Yes, sir.  There's a Court definition as well, but,

16   yes, sir.

17   Q    And you understand that if the software doesn't have

18   the digital certificate, then the repository won't install

19   it?

20   A    That's correct, sir.

21   Q    Now, digital certificates were a tool for computer

22   security that was understood by 1994, right?

23   A    Yes, sir, they were understood.  They weren't

24   necessarily used in this way, sir.

25   Q    Well, digital certificates were known by 1994 to be
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 1  useful to show that digital information was authentic.
 2       You'd agree with that?
 3  A    It means -- I'm having to define authentic.  I'll try
 4  to clarify that, sir.  I believe it means that you can tell
 5  the source from which it came.
 6  Q    And you didn't invent the idea of digital certificates,
 7  did you?
 8  A    No, sir.
 9            THE COURT:  Counsel, approach the bench, please.
10            (Bench conference.)
11            THE COURT:  I've received a message from our local
12  electric provider that over the weekend, their substation
13  that feeds the downtown area of Marshall was vandalized.
14  Apparently, they were broken into for somebody to steel
15  copper wire.
16            In doing so, they knocked over some drums of
17  hazardous materials, and they're in the process of doing a
18  hazmat cleanup of the substation.  They may have to switch
19  some of the circuits to facilitate the cleanup, which means,
20  I'm told, between now and 2:30, there's a chance the lights
21  may go out.
22            But if they do, it shouldn't be more than a minute
23  or two to switch the circuit.  So if you two need to tell
24  your technical people to make sure they're backed up with
25  their surge protectors or whatever they need to do to
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 1   replace, please do so.  I thought I better tell you now

 2   before we got too far into 2:00 o'clock.

 3              MR. PRITIKIN:  All right.

 4              MR. BAXTER:  I thought you were going to tell me

 5   Mr. Pritikin was a suspect.

 6              THE COURT:  No, sir.

 7              MR. PRITIKIN:  We'll just stay in place if that

 8   happens.

 9              THE COURT:  We'll just -- yeah.  I just didn't

10   want anybody surprised.

11              MR. PRITIKIN:  All right.

12              MR. BAXTER:  Thank you.

13              MR. PRITIKIN:  Thank you.

14              MR. BAXTER:  Let me talk to Mr. Diaz right quick

15   like to make sure he's --

16              THE COURT:  Yeah.  You may each take a minute.

17              (Bench conference concluded.)

18              THE COURT:  Counsel, take a moment to do that, and

19   then we'll continue.

20              (Pause in proceedings.)

21              THE COURT:  All right.  Let's continue.

22   Q    (By Mr. Pritikin) And, Dr. Stefik, we're going to turn

23   now to AXE-1 (sic), and we'll put that on the screen.

24        And this is a document that is called the Department of

25   Defense Standard, Department of Defense Trusted Computer
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 1   System Evaluation Criteria.  And you see it's dated December

 2   1985?

 3   A    Yes, sir.

 4   Q    Now, you've seen this before, right?

 5   A    Yes, sir.

 6   Q    You're familiar with it?

 7   A    Reasonably so, sir.

 8   Q    This is a book that was prepared by the United States

 9   Department of Defense in 1985 on trusted computer systems,

10   right?

11   A    That's correct, sir.

12   Q    And you were aware of the -- this is called the Orange

13   Book.  You've heard that name?

14   A    Yes, sir.

15   Q    And the reason it's called the Orange Book is that the

16   actual copy of it has an orange cover on it if we got an

17   original, right?  You've seen those?

18   A    I've seen those, sir.

19   Q    Now, you were aware of the Orange Book before you filed

20   your patent application in 1994, correct?

21   A    Yes, sir.

22   Q    And, in fact, you had conversations with one of your

23   co-inventors, Dr. Merkle, about this book and its contents

24   before the patent application was filed?

25   A    Yes, sir.
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 1  Q     The term "trusted system" was originally used to

 2  describe computer systems for military and national security

 3  applications that could securely hold classified and secret

 4  information, right?

 5  A     That sounds like a quote from me, but, yes, sir.

 6  Q     And, now, you yourself have written a number of times,

 7  have you not, that the idea for trusted systems originally

 8  came from the military and national security world?

 9  A     Yes, sir.  I mean, they definitely had an idea of

10  trusted systems, and I liked that term.

11          MR. PRITIKIN:  Let's put up a demonstrative that

12  has a couple of these quotes.

13          Mr. Simmons, do you have that handy?  I think it's

14  ADX-2.1.

15  Q    (By Mr. Pritikin) And do you see these are quotations

16  from three articles that you have written?  Do you recognize

17  all three of those as articles you wrote?

18          One is --

19  A     Yes, sir, I do.

20  Q     -- is "Libraries and Digital Property Rights" in 1997.

21  The Internet Edge, I think you talked about that this

22  morning, in 1999.  And then "Security Concepts for Digital

23  Publishing and Trusted Systems" in 1997.  Those are all

24  articles you wrote?

25  A     Yes, sir.
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 1  Q     And in the first of these, the "Libraries and Digital

 2  Property Rights" article, you said the term "trusted system"

 3  was originally used to describe computer systems for

 4  military and national security applications?

 5  A     Yes, sir.

 6  Q     And then more recently, it's been generalized for

 7  things that could be used in electronic commerce and digital

 8  publishing?

 9  A     Yes, sir.

10  Q     And similarly, in '99, you, again, said that the term

11  "trusted system" came originally from military terminology?

12  A     That's right, sir.

13  Q     And if we look at the third of these, which is AX-116,

14  you say, historically, the term has been used in the

15  military context for computer systems suitable for managing

16  works that carry national and military secrets, right?

17  A     Yes.

18        MR. PRITIKIN:  Let's turn next to PX-129.

19  Q     (By Mr. Pritikin) And, now, this is one of the

20  documents that Plaintiff's counsel asked you about this

21  morning, isn't it?

22  A     That's correct, sir.

23  Q     This is a report that was made by the U.S. Patent

24  Office to Congress.  Do you recognize that?

25  A     Yes.  I have not read this in full, sir, but I do
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 1   recognize it.

 2   Q.    And, now, this was around 2002.

 3         Do you see that?

 4   A.    I'm not sure where you're looking, sir, but I have no

 5   reason to dispute -- oh, there it is, November 2002.  I'm

 6   not sure when the document was written, sir, but -- I'm not

 7   sure what your point is.

 8   Q.    Now, let's turn to Page 8.  And you see this is a

 9   section that you were asked about on the direct examination

10   by Plaintiff's counsel this morning, this Section 1, Trusted

11   Computing.

12         And the sentence was highlighted:  The conceptual

13   underpinnings of trusted computing technologies traced back

14   to Dr. Mark Stefik's pioneering work at Xerox PARC.

15         Do you see that?

16   A.    Yes, I do.

17   Q.    And that's the language that you were asked about this

18   morning?

19   A.    It is.

20   Q.    Now, this sentence is taken from a section of the

21   report that is entitled Trusting -- Trusted Computing.

22         Do you see that?

23   A.    Yes.

24   Q.    And if we turn back one page, back to Page 7, at the

25   bottom, you see the section that this is in is called
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 1   Digital Rights Management, DRM, Systems.   That's Section C.

 2        Do you see that?

 3   A.   I do.

 4   Q.   Now, let's flip back to Page 8.   And you see Trusted

 5   Computing is just the first of the DRM sections in this

 6   report.   There are several others.   There's 2, and they

 7   continue on.   Do you see that it has other sections on DRM

 8   systems?

 9             MR. PRITIKIN:   Let's go to Page 9.

10             3, 4, continue on.

11   Q.   (By Mr. Pritikin) So do you see that the section on

12   Trusted Systems is just one section of the DRM part of the

13   report, sir?

14   A.   I do.

15   Q.   Now, if we turn to Page 9, in Section 4 under DRM,

16   there's a section called Types of DRM Systems, and you see

17   the report says that "a wide range of DRM options are

18   available in the marketplace today, reflecting the fact that

19   no single technology or solution can fulfill the remarkably

20   diverse requirements of the digital marketplace."

21        Do you see that?

22   A.   I do.

23   Q.   Now, let's go to Page 10.

24        And do you see, beginning on Page 10, the report lists

25   companies and products that are involved in this field
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 1  beginning in Section B?

 2  A.    Yes.

 3  Q.    And the first company listed is Adobe Systems?

 4  A.    I do.

 5  Q.    And then if we turn over to the next page, there are

 6  more companies, and the next page, more companies, and the

 7  next page, more companies.

 8        And on this page, we find ContentGuard.  Do you see

 9  that?

10  A.    Yes.

11  Q.    And I counted them.  I'll represent to you that there

12  are, in fact, 49 different companies that are here,

13  including ContentGuard.

14        But you've seen this report before, and you've had a

15  chance to look at it, Dr. Stefik?

16  A.    No, I have not read this report, sir.

17  Q.    But you're aware of the fact that there are a whole lot

18  of companies besides ContentGuard that are listed here?

19  A.    Well, I can see that as I turn the pages, sir.

20              MR. PRITIKIN:  Let's go back to Page 4.

21  Q.    (By Mr. Pritikin) And in the first paragraph, do you

22  see that when this report was prepared, one of the companies

23  that the U.S. Patent Office had gotten written comments from

24  was ContentGuard?

25  A.    Yes.
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 1   Q.    And then they had a public hearing, and one of the

 2   people who testified there was Mr. Michael Miron, who was

 3   the chief executive officer of ContentGuard?

 4   A.    That's correct, sir.

 5   Q.    Do you know Mr. Miron?

 6   A.    I have met him.  I don't know...

 7   Q.    Let's turn next to another of the articles that was

 8   used this morning or shown to you, portions of it, and that

 9   is an article by a gentleman by the name of Bill Rosenblatt.

10         And in case we've forgotten, can you remind us who Bill

11   Rosenblatt is or was?

12   A.    I met him when he was working at Times Mirror, I

13   believe, in New York, and he has become a spokesperson in

14   the field of DRM.

15   Q.    And this is the slide that was put up this morning --

16   A.    Yes.

17   Q.    -- where it was quoted as saying that "Stefik has been

18   father to one powerful idea, and that's the trusted system."

19         Do you see that?

20   A.    Yes.

21   Q.    Now, have you had a chance to actually look at the

22   whole article that Mr. Rosenblatt wrote and that these

23   extracts were taken from?

24   A.    I believe it was a book review, sir, but it's been many

25   years since I looked at it.
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 1   Q.    You haven't looked at it recently --

 2   A.    No, sir.

 3   Q.    -- fair to say?

 4         Well, let's take a look at some of the other portions

 5   of this.

 6              MR. PRITIKIN:  And it might be easier for me just

 7   to put it on the ELMO here, Mr. Simmons, if I can do that.

 8   Q.    (By Mr. Pritikin) And let me just -- to be clear, you

 9   see this is the first page, Bill's Bookshelf, Postcard from

10   the Edge?

11   A.    Okay.  I see that.

12   Q.    All right.  And let's look at the second page.

13         All right.  I think I can read it.

14         Do you see I've highlighted some text in this same

15   article that I don't think was read this morning when we

16   were going through it?

17         It says first, that "conceptually, a trusted system is

18   a tamper-proof black box that allows access to information

19   only under strictly specified conditions."

20         Do you see that?

21   A.    Yes.

22   Q.    Now, you considered Mr. Rosenblatt to be knowledgeable,

23   didn't you?

24   A.    Well, I did, yes.

25   Q.    And you had a great deal of respect for him; that's
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 1  fair to say?

 2  A.    Well, I -- mostly so, yes.

 3  Q.    In fact, do you know that he worked as a paid

 4  consultant for ContentGuard at some point?

 5  A.    I knew that, sir, yes.

 6  Q.    Now, let's look a little further down on the page and

 7  see what else he had to say.

 8        Do you see he wrote -- talking about the trusted

 9  systems, he says:  But the real world is not so simple.

10  First, there are a number of technical hurdles to

11  implementing the trusted systems idea.

12        Stefik's original concept was to implement trusted

13  systems as dedicated hardware devices which could provide

14  the necessary security.  But for many years, the standard

15  way of getting information over a network has been the PC,

16  which is a terrible platform for trusted systems.  It is too

17  general purpose and has too many security holes.

18        Do you see that he wrote that?

19  A.    I do.

20  Q.    Do you recall seeing this before today?

21  A.    I don't remember, but I don't doubt it.

22  Q.    Then he goes on to write:  A few vendors tried to

23  implement trusted or DRM systems with hardware devices that

24  consumers could use alongside standard PCs, but such devices

25  have never been accepted in the marketplace.
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 1        Do you see he wrote that as well?
 2   A.    I see that sentence there, yes.
 3   Q.    Then he goes on to say:  The second problem with
 4   Stefik's trusted system model is that it needs to be
 5   everywhere in order to be effective.
 6        And do you see he also had that criticism?
 7   A.    It's a criticism of something, but, yes, I do see it,
 8   sir.
 9   Q.    It's a criticism of what you did.  You're named there,
10   aren't you, Dr. Stefik?
11   A.    I didn't recognize that the previous paragraph about --
12   was about the system I invented, but maybe that's what he
13   intended.  I'm not sure.
14   Q.    Now, there's another slide that was shown this morning,
15   and it quoted someone from Microsoft, and it was used to
16   suggest that, again, someone at Microsoft had been
17   complimentary of the work.
18        You're aware, are you not, that Microsoft was a part
19   owner of ContentGuard in 2002 when those statements were
20   made?
21   A.    That sounds right, sir.
22   Q.    And so since Microsoft owned part of Microsoft (sic),
23   you'd agree, wouldn't you, that Microsoft had an interest in
24   talking up what was done and came out of ContentGuard?
25   A.    I believe you meant Microsoft owned part of
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 1   ContentGuard, and that would be correct, sir.
 2              MR. PRITIKIN:  We can take that down.
 3   Q.   (By Mr. Pritikin) Now, back in 2006, you signed a
 4   consulting agreement with ContentGuard; is that right,
 5   Dr. Stefik?
 6   A.   2006?
 7   Q.   Yes.
 8   A.   Yes, that sounds right.
 9              MR. PRITIKIN:  Let's put up AX-26.
10   Q.   (By Mr. Pritikin) This includes the consulting
11   agreement that you signed?
12   A.   It looks right.
13   Q.   So to get the sequence straight, ContentGuard was spun
14   off in 2000, but then six years later, they came back, and
15   you began working as a consultant for them?
16   A.   Correct.
17   Q.   But it's fair to say your day job was still at Xerox?
18   A.   Absolutely.
19   Q.   And one of the reasons that they hired you as a
20   consultant, you believed, was because you thought they might
21   be getting more aggressive in the field of patents, right?
22   A.   No, I don't know.  I think actually there was a
23   different purpose, sir.
24   Q    Well, you had said that you thought they were going to
25   get more aggressive, didn't you?
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 1   A      I don't know.  I'm not sure, sir.

 2   Q      Well, let's take a look at -- you know, your deposition

 3   was taken in this case.

 4          Do you recall that, sir?

 5   A      Yes, for sure.

 6   Q      And a deposition is where you came in and you answered

 7   questions on your oath, and a court reporter took down all

 8   the statements that you made.

 9          Do you recall that?

10   A      Yes, sir, that's what it is.

11   Q      All right.  Now, I think we have put on the table there

12   the transcripts of those depositions.

13   A      Okay.

14   Q      And do you see the transcript from November 3rd of last

15   year, 2014?

16   A      I have to find it.

17          Okay.  Got it.

18   Q      And could you turn over to Page 250.  And I'll direct

19   your attention to Line 9.

20          The question that was asked:  When did you become a

21   consultant with ContentGuard?

22          Answer:  I think we turned over some documents about,

23   you know, agreements or something.

24             MR. PRITIKIN:  Let me make sure I have the right

25   passage here, sir.
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 1                  It's further down, beginning at Line 17:
 2                  QUESTION:  And why did you become a consultant for
 3   ContentGuard?
 4                  MR. PRITIKIN:  Beginning at Line 17.
 5                  ANSWER:  Peggy Chen contacted me about whether I
 6   could consult with them on things, so in board --
 7                  MR. PRITIKIN:  I think it means "broad terms."
 8                  ANSWER:  -- they were interested in developing new
 9   IP.  I -- I -- I think they were about to get more
10   aggressive in some way.  I don't know.  I didn't have much
11   to do with that because I was never really part of the inner
12   circle of their decision-making.
13   Q    (By Mr. Pritikin) Do you recall being asked that
14   question and giving that response?
15   A    Well, I trust that's a faithful rendition.  I'm just
16   noticing it talks about developing new IP, and that's the
17   part I remembered.
18   Q    All right.  Now, what ContentGuard did after it was
19   spun off was to take your old patent applications from 1994.
20   And there were still continuations alive from those, and
21   they continued to file new applications based on those;
22   isn't that right?
23   A    That's correct.
24   Q    And so they filed these new patent applications, and
25   they continued to do that for a number of years afterward
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 1   and to get new patents issued that dated back to your

 2   original application, right?

 3   A     That's correct.

 4   Q     And I think we went over this before.  The claims that

 5   were being written by the lawyers in those new patent

 6   applications, even though they're your patents, you were

 7   never given a chance to read those claims, were you, before

 8   they were filed?

 9   A     That's correct, sir.

10   Q     And that's true of all of the patents in this lawsuit,

11   right?  You had never seen the claims in those patents

12   before the applications were filed at the Patent Office?

13   A     I believe that's true to the best of my memory, sir.

14   Q     Now, you have not offered an expert report in this

15   case.  You're not an expert witness on infringement or

16   invalidity, right?

17   A     I'm not classified as an expert witness on those topics

18   in this case, sir, yes.

19   Q     You're a fact witness in this case?

20   A     I'm a fact witness.

21   Q     And is it correct, sir, that you are being paid $500 an

22   hour by ContentGuard?

23   A     Yes, sir.

24             MR. PRITIKIN:  I pass the witness.

25             THE COURT:  Redirect by the Plaintiff?
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 1                MR. BAXTER:  Yes, Your Honor.

 2                Thank you.

 3                THE COURT:  All right.  Mr. Baxter, whenever

 4   you're ready.

 5                MR. BAXTER:  Thank you, Your Honor.

 6                        REDIRECT EXAMINATION

 7   BY MR. BAXTER:

 8   Q    Dr. Stefik, let's start with the Rosenblatt article

 9   first.

10                MR. BAXTER:  Have you got that up there, or can we

11   get that up, Mr. Diaz?

12                It's -- have you got the whole article?  If not, I

13   can read it to him.

14   Q    (By Mr. Baxter) Do you remember what the date of that

15   thing was?

16   A    No, sir.

17   Q    August of 2000, does that sound about right?

18   A    I -- I trust, sir.  Actually, I don't remember.

19   Q    Okay.  I'm going to represent to you the copy that they

20   gave me said August of 2000.  Sort of early in the game, was

21   it not?

22   A    Yes, sir.

23   Q    Well -- and let me read the relevant portion to you

24   that Counsel didn't read to you.

25                And it says this:  Others tried building DRM solutions
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 1  to PCs entirely and software based on encryption technology.

 2       Does that sound familiar?

 3  A    Yes, sir.

 4  Q    These systems are catching on slowly, but they are

 5  still overly complex and cumbersome.  It's likely that eBook

 6  readers and other network appliances will eventually assume

 7  the role of the trusted system.

 8       Is that what happened?

 9  A    Yes, sir, that's right.

10  Q    And so both you and Mr. Rosenblatt turned out to be

11  prescient about that?

12  A    That sounds right.

13  Q    Even in the year 2000?

14  A    Okay, sir.

15  Q    All right.  Now, I believe that Mr. Pritikin showed you

16  at the '007 patent.  Do you have that in your book up there?

17  A     '007.  I do, sir.

18          MR. BAXTER:  And we can go to Column 2.

19  Q    (By Mr. Baxter) Do you remember at about Line --

20          MR. BAXTER:  Starting about Line 12, Mr. Diaz,

21  where it says:  Yet another scheme.

22  Q    (By Mr. Baxter) Did you see that?  Did he read that to

23  you?  Which requires a key to enable its use.  Do you

24  remember him showing that to you?

25  A    That looks right, sir.
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 1   Q     All right.  I was wondering if he -- if he read this
 2   portion to you.
 3             MR. BAXTER:  You see, Mr. Diaz, where it says:
 4   The demos can be freely used?  Can you highlight that for
 5   me?
 6   Q    (By Mr. Baxter) But in order to use the actual product,
 7   the key must be purchased.
 8        And then it says:  These schemes do not hinder copying
 9   of the software once the key is initially purchased.
10        Is that what you put in your patent?
11   A     This is '072.  It's my patent, yes, sir.
12   Q     And what's the problem there.  You have the key, and
13   the key is used.  Then what happens?
14   A     Well, the problem, sir, is that we needed to make the
15   computers safe for publishers.  That meant that the trusted
16   system needed to be responsible and trustworthy for
17   maintaining the usage rights that were required.
18        So if the schemes do not hinder copying, then the works
19   can still be copied without regulation on the Internet.  And
20   if that's what we're doing, then the publishers are at risk
21   of doing business of free copies, sir.
22   Q     And that wasn't acceptable, was it?
23   A     That was -- that was part of the problem I was trying
24   to solve, sir.
25   Q     All right, sir.  Now, he asked you about -- in that
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 1   same book at Tab 8 about the '053 patent.

 2        Do you remember that?

 3   A    Yes, sir.

 4   Q    And he asked you several questions about what you had

 5   written in the '053 patent.

 6        Do you remember that?

 7   A    I don't remember him asking me that, sir, but let's

 8   keep going.

 9   Q    All right.  You remember he asked you, well, you had

10   the -- you had the obligation of candor.

11        Do you remember that?

12   A    Indeed.

13   Q    Is the '053 patent your patent?

14   A    No, sir.

15   Q    Okay.  Is that a meta-right patent that belongs to

16   somebody else?

17        Is your name on that one?

18   A    My name is not on this patent, sir.

19   Q    All right.  Now, he also asked you about the Orange

20   Book.  That's at Tab 81.

21        Do you remember that?

22   A    Yes, sir.

23   Q    You're familiar with the Orange Book?

24   A    I have read it, sir.

25   Q    All right, sir.  And that was a DOD publication?
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 1   A     Absolutely.
 2   Q.    Was the DOD trying to get content out over the
 3   Internet?
 4   A.    Sir, quite the opposite.  When I was working on other
 5   projects at PARC, I was a consultant to the DOD and the
 6   intelligence agencies.  Even as of two or three years ago,
 7   when I was in the intelligence analyst office, every analyst
 8   would have two workstations on their desk.
 9        One of them was for their internal documents.  It is
10   not even connected to the Internet.  And that was
11   characteristic of the computers described in the Orange
12   Book.  They were not intended to let things out.  They were
13   not even allowed to connect.
14   Q.    You mean the Orange Book wasn't trying to get content
15   out to somebody else's computer over the Internet?
16   A.    Sir, this is Fort Knox, so to speak -- more likely Fort
17   Meade.  No.  Quite the opposite, sir.
18   Q.    Did the Orange Book talk about usage rights?
19   A.    No, sir.
20   Q.    Did the Orange Book have behavioral integrity?
21   A.    No, sir.
22   Q.    Did they have any connection to the outside world over
23   their computers like this that they talked about in the
24   Orange Book?
25   A.    Not those computers, sir.
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 1   Q.   Okay.  Well, let me ask you this:  He says you stole

 2   the word "trusted computer" or "trusted computer system."

 3   How do you plead:  Guilty or not guilty?

 4           MR. PRITIKIN:  Objection, Your Honor.

 5           THE COURT:  State your objection.  State your

 6   objection.

 7           MR. PRITIKIN:  I think, one, it's a leading

 8   question.  Two, it misrepresents what I said.

 9           THE COURT:  I'll sustain as to leading.

10   Q.   (By Mr. Baxter) Did you plead guilty or not guilty to

11   stealing the word "trusted system" from the Department of

12   Defense?

13   A.   Stealing the word?

14   Q.   "Trusted system," is that something that you were

15   trying to say you made up yourself?

16   A.   Oh, no, sir.  I was trying to find a new kind of

17   trusted system for a different purpose.

18   Q.   Were -- were you trying to trick the world into saying

19   that Mark Stefik invented that phrase, and it was somehow

20   unique to you?

21   A.   No, sir.  I simply liked the phrase.  I wanted my --

22   the computers I was describing to be trusted, but for

23   something else.

24   Q.   All right, sir.  Now, we had a lot of questions --

25   excuse me, I dropped my note -- about whether or not the
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 1   usage rights and the content had to travel together.  Do you

 2   remember those questions?

 3   A.   Yes, sir.

 4   Q.   In your patent, did you write your patent so that the

 5   usage rights always had to travel with the content at all

 6   times?

 7   A.   No, sir.

 8         MR. BAXTER:  Mr. Diaz, can I get Slide 13 up -- 13

 9   in the opening.  I'm sorry, Mr. Diaz, which will be the --

10   there we go.

11   Q.   (By Mr. Baxter) You remember we looked at this one, and

12   I said this was going to be one of Apple's excuses where

13   we've got the Akamai servers with the content and the iTunes

14   Store with the usage rights.

15         Do you remember that?

16   A.   Yes, sir.

17   Q.   Okay.  At the time that the content is on the Akamai

18   server, do you need any usage rights to go with it?

19   A.   No, sir.

20   Q.   If I haven't purchased or rented The Avengers, do I

21   need usage rights?

22   A.   In order to play the movie, you have to have usage

23   rights, sir.

24   Q.   Before I buy it, do I need usage rights?

25   A.   No, sir.
```

 1 Q.   When I buy it and it's coming over the Internet from

 2 the Akamai server, do I need usage rights at that moment?

 3 A.   No, sir.

 4 Q.   When it hits my phone or my tablet, but I haven't

 5 decided to watch it yet, is it important whether the usage

 6 rights came from the iTunes Store or traveled with the

 7 content from the Akamai server?

 8   MR. PRITIKIN: Objection, Your Honor. This is

 9 getting into questions of infringement.

10   THE COURT: Overruled.

11 Q.   (By Mr. Baxter) Tell me, Doctor, is it important?

12 A.   It's not important, sir.

13 Q.   Okay. Did your patent require that the usage rights

14 always move with the content?

15 A.   No, sir.

16 Q.   Did your patent envision that it could move with the

17 content?

18 A.   The patent is silent on this, sir.

19 Q.   All right. Could it move with the content?

20 A.   Well, it could. What the patent says is that the

21 rights have to be enforced by the enforcement software.

22 Q.   Okay, sir. When is it important that the content and

23 the usage rights be attached or treated as attached?

24 A.   Sir, it's important that they be treated as attached

25 when they're on the repository and someone is trying to use

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 1  it.  So that is the very moment when someone hits the play

 2  button and says:  Can I play this movie?

 3      And the responsibility of the trusted repository is to

 4  check the rights and to enforce them at that moment.  And it

 5  must always do that so that the publishers feel safe, the

 6  consumers can get the work, and it can be played anytime,

 7  anywhere.

 8  Q.   Now, I notice that Counsel asked you, when you said

 9  "treated as attached," he said:  Well, in your mind, the

10  phrase can be "treated as attached."  But is it in your

11  mind, or is it -- did you get that someplace else?

12  A.   "Treated as attached" is a phrase from the Court

13  construction.

14  Q.   And do you understand it's in these jurors' notebook?

15  If they look at the Markman ruling, it says right there in

16  the Markman ruling, "treated as attached."

17  A.   Yes, sir.

18  Q.   All right, sir.  Now, what is it in the mobile device

19  that enables the usage rights to be treated as attached to

20  the content?

21  A.   It's the enforcement software, sir.

22  Q.   All right.

23  A.   That's -- that's where it is.

24  Q.   All right.

25          MR. BAXTER:  Mr. Diaz, can I see -- I believe it's
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 1  Slide -- I'm going to have to find it from Dr. Stefik's

 2  original examination.  I believe it's Slide -- what is it?

 3  Slide 22?  No.

 4          Can I be excused just one second, Your Honor?

 5          THE COURT:  Take a minute.

 6          MR. BAXTER:  Thank you.

 7          (Pause in proceedings.)

 8          MR. BAXTER:  Oh, it is -- it's going to be this

 9  slide right here, Mr. Diaz, right after -- it'd be Slide 14.

10   There we go.

11  Q.   (By Mr. Baxter) Is this the term that we indicated,

12  Dr. Stefik, where it says "treated as attached"?

13  A.   I'm not sure I understand, sir.  It's in the claim

14  construction.

15  Q.   All right.  And what is it?  What is it in the -- in

16  the phone or in the mobile device that causes the usage

17  rights to be treated as attached to the content?

18  A.   Sir, it is the --

19          MR. PRITIKIN:  Your Honor, objection.

20          THE COURT:  State your objection, Counsel.

21          MR. PRITIKIN:  Both it's getting into questions of

22  infringement, and it's an opinion that is coming from him as

23  a fact witness.

24          THE COURT:  I'll sustain as to questions of an

25  opinion that exceed his standing as a fact witness.  He
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 1   can't -- you can't use him as an expert, Mr. Baxter.

 2             MR. BAXTER:  And I'm not.  I'm asking him where --

 3   what it is --

 4             THE COURT:  Well, I think that question does call

 5   for an expert opinion --

 6             MR. BAXTER:  Thank you.

 7             THE COURT:  -- and I'm going to sustain the

 8   objection.

 9   Q.   (By Mr. Baxter) Is there a place in your patent,

10   Dr. Stefik, or is there a mechanism in your patent that will

11   somehow cause the usage rights to be treated as attached to

12   the content?

13   A.   Yes, sir.  We had a slide on that in the direct

14   testimony.

15   Q.   All right, sir.  And what is that mechanism?

16   A.   That mechanism is the enforcement software, sir --

17   Q.   All right.

18   A.   -- which every time someone asks to use the digital

19   content, it is supposed -- the enforcement software has to

20   check that right to make sure the conditions are satisfied

21   and then apply -- apply that right, thus enforcing the

22   publisher's wishes.

23   Q.   You wrote -- or had a slide with a publisher where you

24   talked about a shirt tag.

25   A.   Yes, sir.
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 1   Q.    Do you remember that?

 2   A.    I do, sir.

 3   Q.    And did you indicate that -- did that shirt tag analogy

 4   indicate that the usage rights and the content always had to

 5   be together?

 6   A.    Sir, it was an analogy.  That's a shirt.  This is a

 7   computer.  That's the physical world.  This is the digital

 8   world, sir.

 9        So I spoke that way because I was trying to communicate

10   a pretty complicated set of ideas to people, and it was

11   easiest to use very simple, everyday physical metaphors.

12   Q.    And what was your metaphor about the shirt tag?

13   A.    Well, the shirt tag idea was at least it was a -- it

14   was the shirt which was -- that corresponded to the digital

15   content and the tag corresponded to the usage rights.  And I

16   wanted to make sure that people -- the publishers could say

17   what rights were intended to be enforced when the digital

18   content was being used.

19   Q.    Now, lastly, Dr. Stefik, I want to ask you about the

20   paper written by some of your colleagues in May of 1997

21   called "Self-Protecting Documents."

22   A.    Yes, sir.

23   Q.    Do you remember that?

24   A.    I do.

25             MR. BAXTER:  Mr. Diaz, can you get that up, which
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 1   was in their notebook Exhibit 145?  It was -- I'm not

 2   sure -- that is it, yes.

 3            And if you could go to the page that is 426 in the

 4   Bates numbered called Related Work, Paragraph 1.2.  And if

 5   you would blow that paragraph up.

 6   Q    (By Mr. Baxter) Now, he asked you about this paragraph,

 7   and he was talking about the related work and whether or not

 8   this particular approach, which turns out to be the secure

 9   container approach -- do you remember that?

10   A    Yes, sir.

11   Q    Let me see if I can get down to the -- to the bottom.

12   See down at the bottom where it says:  Thus the secure

13   container approach?

14            MR. BAXTER:  Do you see that, Mr. Diaz?

15   Q    (By Mr. Baxter) Read that for us, Dr. Stefik.

16   A    Thus, the secure container approach only provides a

17   solution for secure transmissions, but does not provide any

18   mechanism to prevent authorized users from obtaining the

19   original document and then using and redistributing it at

20   their will.

21       In other words, this approach offers no solution to the

22   document protection problem.

23   Q    And was that the problem with the secure container

24   approach?

25   A    That's correct, sir.
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 1  Q     Now, in 1997, your colleague said:  Well, there are

 2  some problems with the trusted system.  There's some sort

 3  of -- of real-world problems.

 4        Did you agree with that at the time?

 5  A     Sir, there are real-world problems with every security

 6  system.

 7  Q     And that was in 1997.  As time went on, and as the

 8  Internet got better and the mobile devices and the other

 9  devices got better, did those problems persist?

10  A     Well, people found ways to deal with these things.

11  I -- I didn't really agree that these problems were

12  insurmountable, sir.

13  Q     Did it turn out they were insurmountable?

14  A     No, sir.

15  Q     Okay.  Now, they also asked you about the people at the

16  back, Tygar and White.

17  A     Yes, sir.

18  Q     Were you familiar with the ABYSS system?

19  A     I had read about it, sir.

20  Q     All right, sir.  Were you familiar with it when you did

21  your system?

22  A     I had read about it, yes.

23  Q     How about Tygar and Yee?

24  A     Yes, sir.

25  Q     All right, sir.  Were you familiar with the Griswold
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 1   system?

 2   A     Yes, sir.

 3   Q     All right.  The Griswold system was not a trusted

 4   system, was it?

 5   A     Not as we've defined it, sir.

 6   Q     Dr. Stefik, still proud of your system?

 7   A     I am, sir.  Thank you, sir.

 8             MR. BAXTER:  Thank you very much, Your Honor.

 9   That's all I have.

10             THE COURT:  You pass the witness?

11             MR. BAXTER:  I do, Your Honor.

12             THE COURT:  Is there additional cross-examination

13   from the Defendant?

14             MR. PRITIKIN:  No, sir.  We pass the witness.

15             THE COURT:  All right.  You may step down,

16   Dr. Stefik.

17             THE WITNESS:  Thank you, sir.

18             MR. BAXTER:  May he be excused, Your Honor?

19             THE COURT:  Is there objection?

20             MR. PRITIKIN:  No objection, Your Honor.

21             THE COURT:  All right.  Dr. Stefik, you are

22   excused.  You're free to stay.  You're also free to leave.

23             THE WITNESS:  Thank you, sir.

24             THE COURT:  Thank you.

25             Counsel, approach the bench, please.
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 1                 (Bench conference.)

 2                 THE COURT:  All right.  Dr. Goodrich is next; is

 3    that correct?

 4                 MR. BAXTER:  Yes, sir.

 5                 MR. PRITIKIN:  Yes, Your Honor.

 6                 THE COURT:  Okay.  I have reviewed all the

 7    material at issue with regard to Slides 62 and 63, both as

 8    we discussed in chambers and during the interim while

 9    Dr. Stefik's cross has been taking place.  I'm satisfied

10    that the objection by the Defendants is well-taken, and I'm

11    going to strike Slides 62 and 63.

12                 MR. THOMAS:  Okay.

13                 THE COURT:  All right.  Is there anything else

14    outstanding before we put Dr. Goodrich on?

15                 MR. THOMAS:  Not that I'm aware of, Your Honor.

16                 THE COURT:  How long do you anticipate the direct?

17                 MR. THOMAS:  It will take at least two hours, Your

18    Honor.

19                 THE COURT:  Then we'll take a recess first.

20                 MR. THOMAS:  Okay.  All right.

21                 (Bench conference concluded.)

22                 THE COURT:  Ladies and gentlemen, the next witness

23    is going to be fairly lengthy so we're going to use this

24    opportunity to take a recess before the next witness is

25    called.
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 1              You may leave your notebooks closed and in your

 2   chairs if you'd like.  As you -- as you leave for the jury

 3   room, take this opportunity to stretch your legs and get a

 4   drink of water.  Do not discuss the case among yourselves.

 5   Follow all my other instructions, and we'll be back in here

 6   shortly.

 7              You're excused for recess at this time.

 8              COURT SECURITY OFFICER:  All rise for the jury.

 9              (Jury out.)

10              THE COURT:  Court stands in recess.

11              MR. THOMAS:  Your Honor, if I may be heard in

12   respect to that objection?

13              My understanding was the objection with respect to

14   the Doctrine of Equivalents analysis was only as to the

15   FairPlay servers -- I mean, I'm sorry -- only as to the

16   iTunes Servers, not as to the FairPlay servers.

17              And I believe you just told us you wanted me to

18   strike or take out all of Slides 62 and 63.  In other words,

19   I don't believe Mr. Pritikin said that we had not alleged

20   the Doctrine of Equivalents analysis for how the updates to

21   the FairPlay servers are performed.

22              THE COURT:  Can you respond to that, Mr. Pritikin?

23              MR. PRITIKIN:  I'm going to let Mr. Border do it,

24   Your Honor.

25              THE COURT:  All right.
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 1              MR. PRITIKIN:  I think he's more knowledgeable.

 2              THE COURT:  Just somebody from your side.

 3              MR. BORDER:  Your Honor, Scott Border from Apple.

 4              We had a meeting last night, and we discussed at

 5   length our objections to that slide in general.  And in

 6   particular, with respect to the shared network filer app, I

 7   think Ms. Engelmann will probably confirm that we had a

 8   meet-and-confer on this.  I think her email left out that

 9   discussion.  I didn't have a chance to review it before it

10   was sent to the Court.

11              THE COURT:  Well, clarify for me the Defendant's

12   position with regard to the Doctrine of Equivalents theories

13   of the Plaintiff.

14              MR. BORDER:  Yes, Your Honor.

15              On -- on Slide 63, there is a theory of -- under

16   the Doctrine of Equivalents that -- that states the Apple

17   servers, through the network -- the shared network filer

18   app, infringe.

19              THE COURT:  And that's the basis of your

20   objection?

21              MR. BORDER:  Yes, Your Honor.

22              THE COURT:  So it's not disclosed in the report?

23              MR. BORDER:  Exactly, Your Honor.

24              THE COURT:  And I agree with you on that.  But

25   that being said, does -- and I believe this is Mr. Thomas's
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 1  question.   What Doctrine of Equivalents theories does that

 2  then leave intact?

 3             MR. BORDER:   That means there are no Doctrine of

 4  Equivalents theories intact, at least not with respect to

 5  the demonstratives that we were handed last night.

 6             MR. THOMAS:   Well, I would respectfully disagree,

 7  Your Honor.   I think it has to do with the VPN access + SSH

 8  keys.   That was described in the report of Dr. Goodrich.   I

 9  think the question was whether or not there was an adequate

10  reference in his report to this shared network filer.

11             THE COURT:   All right.  My understanding -- and I

12  guess I'll ask it another time.

13             My understanding is Defendants is -- are not

14  raising an objection on this basis to a DOE theory asserted

15  by the Plaintiffs as to the FairPlay system; is that

16  correct?

17             MR. BORDER:   That is not correct, Your Honor.   We

18  are raising a -- our objection is to -- as to both the

19  iTunes Store servers and the FairPlay servers.

20             It's the entire Slide 63.   There's nothing in

21  Slide 63 that was disclosed in Dr. Goodrich's infringement

22  report.   That was the subject of the bench brief that we

23  handed Your Honor.

24             MR. THOMAS:   Actually, Your Honor, the subject of

25  the bench brief and what we discussed in chambers had to do
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 1   with a shared network app filer, not with respect to the VPN

 2   access + SSH keys.  That is described in detail in

 3   Dr. Goodrich's report.

 4             THE COURT:  Let's see if we can -- let's see if we

 5   can all use the same nomenclature here.  Let's see if we can

 6   divide it between FairPlay and iTunes.

 7             There are surviving DOE theories, despite my

 8   ruling, as to iTunes, correct, not to FairPlay?

 9             MR. BORDER:  Your Honor, there is one disclosed

10   but it is not contained in Slide 63.

11             THE COURT:  I understand that.  But my ruling with

12   the non-use of Slide 63 doesn't deprive the Plaintiffs of

13   their DOE theory as to iTunes.

14             MR. BORDER:  To the extent that they follow

15   Dr. Goodrich's report, that is correct, Your Honor.

16             MR. THOMAS:  And Dr. Goodrich's report included

17   the description of the VPN access + SSH Keys as being the

18   equivalent to a --

19             THE COURT:  Let's do this, Mr. Thomas.

20             If you think you can reconfigure that slide in

21   conformity with my ruling and with -- and in conformity with

22   the DOE survival as to iTunes but not FairPlay, then do so.

23   Show it to the other side, and if there's a problem, let me

24   know.

25             MR. THOMAS:  Yes, Your Honor.
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 1                    THE COURT:  We stand in recess.

 2                    (Recess.)

 3                    COURT SECURITY OFFICER:  All rise.

 4                    THE COURT:  Be seated, please.

 5                    All right.  Counsel, did I understand that the

 6   slide issue has been resolved?

 7                    MR. THOMAS:  Yes, Your Honor.

 8                    We appreciate the Court's indulgence on the time

 9   for that.

10                    THE COURT:  All right.  Let's bring in the jury,

11   please.

12                    COURT SECURITY OFFICER:  All rise for the jury.

13                    (Jury in.)

14                    THE COURT:  All right.  Ladies and gentlemen,

15   please be seated.

16                    Plaintiff, call your next witness.

17                    MR. THOMAS:  Plaintiffs call to the stand

18   Professor Michael Goodrich, Your Honor.

19                    THE COURT:  All right.  If you'll come forward,

20   Professor Goodrich, have a seat here at the witness stand.

21                    You've previously been sworn, correct?

22                    THE WITNESS:  Yes, sir.

23                    THE COURT:  All right.

24                    All right.  Mr. Thomas, you may proceed.

25                    MR. THOMAS:  Thank you, Your Honor.
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 1              MICHAEL GOODRICH, Ph.D., PLAINTIFF'S WITNESS,

 2                          PREVIOUSLY SWORN

 3                         DIRECT EXAMINATION

 4    BY MR. THOMAS:

 5    Q     Good afternoon, sir.

 6    A     Good afternoon.

 7    Q     If you could please, just introduce yourself to the

 8    jury.

 9    A     My name is Michael T. Goodrich.

10    Q     Okay.  Now, Dr. Goodrich -- it is doctor, correct?

11    A     Yes, sir.

12    Q     What exactly is your role in this case?

13    A     So I was asked to study several of the Apple products

14    and systems and come to a conclusion as to whether or not

15    they were infringing the four Stefik patents.

16    Q     And what have you done to get yourself educated about

17    these systems that you were asked to analyze?

18    A     So what I did is to first study the patents, understand

19    the Court's definitions of the various claim terms that we

20    find in those patents, and then study the Apple products and

21    systems using various evidence for how those systems work.

22          And the evidence that I used was some documents that

23    were written by Apple engineers and Apple marketing folks,

24    also look at deposition testimony from engineers from Apple,

25    and also look at and rely on a report about how the source
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 1   code works by a Dr. Trevor Smedley, who will be speaking to

 2   you later on, I think probably tomorrow.

 3   Q    Now, Dr. Goodrich, before I start asking you some

 4   questions about your analysis, I'd like to just get some

 5   background information.  So if you could, have you prepared

 6   some slides that can help explain to us who you are and what

 7   your qualifications are?

 8   A    Yes, sir, I have some slides on that.

 9   Q    Okay.  And let's start with your education.  If you

10   could, just walk us through what your education was.

11   A    So I got my Bachelor's of Arts in 1983 in mathematics

12   and computer science from Calvin College, which is a small

13   private college in Grand Rapids, Michigan.

14   Q    And where did you get your master's degree?

15   A    I got my master's degree in 1985 from Purdue

16   University, which is in West Lafayette, Louisiana.

17   Q    And how about your Ph.D., your doctorate degree in

18   1987?  That looks like it was also from Purdue University;

19   is that correct?

20   A    Yes, sir, that's correct.

21   Q    And what did you do when you finished your doctorate

22   degree at Purdue University?

23   A    I went on to become a professor of computer science at

24   Johns Hopkins University where I was until June of 2001.

25   Q    And at Johns Hopkins University, did you have a
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 1  specific area of research?

 2  A    Yes, sir.  I focused on what's known as algorithms and

 3  data structures, addressing applications and networking,

 4  computer security, and geometric computing.

 5  Q    And what did you do after you left Johns Hopkins

 6  University?  It looks like you went to the Department of

 7  Computer Science at the University of California in Irvine.

 8  Why did you make that move?

 9  A    I made that move primarily for family reasons.  I have

10  family.  My parents and my brother live in Southern

11  California, and I wanted to be closer to them.

12       And the University of California Irvine is also a very

13  topnotch school, so that was also an attraction for me as

14  well.

15  Q    And I see that you are now a chancellor's professor at

16  the University of California of Irvine in the Department of

17  Computer Science.  What does it mean to be a chancellor's

18  professor at that school?

19  A    So the title of chancellor's professor is something

20  that is honorific title that's given to a select number of

21  professors at the University of California at Irvine for

22  people who have demonstrated significant achievements in

23  research and also have a lot of promise for research in the

24  future.

25  Q    Now, Dr. Goodrich, have you published any books or
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 1  articles in your field of expertise?

 2  A    Yes, sir.  The next slide addresses that.

 3        I have over 300 publications in computer science,

 4  including several widely adopted books, and some of them are

 5  shown here on this slide.

 6  Q    Now, these books, are these textbooks?

 7  A    Yes, sir.

 8  Q    Okay.  And what areas are these textbooks directed to,

 9  and who is their audience, what level of people in school

10  would use these textbooks?

11  A    So these are all textbooks that would be addressing the

12  topics of algorithms and data structures, as well as

13  computer security, if you look at that book in the middle.

14        And the target audience are undergraduate students and

15  graduate students, people who are going on to get their

16  bachelor's degree and their master's degree or even Ph.D.

17  Q    Okay.  Now, do any of these textbooks deal with the

18  area of digital rights management, DRM, that area that we're

19  focused on in this case?

20  A    Yes, sir.  That book in the middle on computer security

21  has an entire section just devoted to DRM.

22  Q    And about how many copies of your textbooks have been

23  sold since you published them?

24  A    So over the years, roughly a hundred -- over a hundred

25  thousand copies of my books have been sold to students who
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 1  would be studying computer science.
 2  Q    Now, do you have any patents to your name?  Are you an
 3  inventor on any patents, Dr. Goodrich?
 4  A    Yes, sir.  If we can look at the next slide, it
 5  identifies my four issued U.S. patents where I'm a named
 6  inventor.
 7  Q    And what is the subject matter, just generally, of
 8  those four patents?
 9  A    So two of these patents are in the area of computer
10  security.  One is in the area of networking.  And that one
11  with the cute little animals is in the area of computer
12  animation.
13  Q    Dr. Goodrich, are you a member of any professional
14  societies, or have you achieved any recognitions from those
15  societies?
16  A    Yes, sir.  The next slide deals with that.
17  Q    And I see here that you're a member of the American
18  Association for the Advancement of Science, the Institute of
19  Electrical and Electronics Engineers, and you're a
20  distinguished scientist of the Association of Computing
21  Machinery.
22       Can you just briefly describe for us what those groups
23  are, what their purpose is?
24  A    Certainly.
25       So each of these are professional societies that
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 1   researchers and practitioners belong to as a way of

 2   identifying themselves, that they are members of these

 3   organizations and participate in this kind of work.

 4        The first organization, the AAAS, is a group of

 5   scientists, broadly defined, and they publish the

 6   well-known, highly respected journal just called Science.

 7        And then if we go to the IEEE, this is an organization

 8   that consists of computer scientists and electrical

 9   engineers.  They publish a whole slew of different

10   publications in those areas.

11        And then finally, the ACM is the organization of just

12   computer scientists who also publish a whole bunch of

13   different journals and conference proceedings on computer

14   science.

15   Q    And what is the currently -- approximately the

16   membership for the American Association for the Advancement

17   of Science?

18   A    My understanding of somewhere between a hundred and

19   200,000 members.

20   Q    And the membership currently of the Institute of

21   Electronic -- Electrical and Electronics Engineers?

22   A    I think it's around 400,000.

23   Q    And how about for the Association for Computing

24   Machinery?

25   A    I think that's around 100 to 200,000, also.
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 1   Q     Now, I notice that you're a fellow of each of these

 2   organizations.  What does it mean to be accorded the rank of

 3   "fellow" within these professional organizations?

 4   A     So each of these organizations has a mechanism where

 5   members can be nominated to become what's called a fellow.

 6   And the way that that happens is that some other person

 7   who's already a fellow nominates you.

 8         And then a group of other fellows endorse your

 9   nomination and say:  Yeah, this person has done significant

10   achievements in this area, deserves to become a fellow.

11         And then there's a distinctions committee who looks at

12   all the applications in a given year and then decides who is

13   indeed deserving to become a fellow.

14         In each of those cases, I went through each of those

15   processes and was named a fellow of each of those

16   organizations.

17   Q     And for each of those organizations, what percentage of

18   the total membership of each organization approximately ever

19   achieves the distinction of being named a fellow of that

20   organization?

21   A     In -- in rough terms, it's roughly the top 1 to

22   2 percent of the membership of each of these organizations.

23   Q     We didn't talk about here a Fulbright Scholar, and you

24   have from parentheses "in Denmark."  Could you just briefly

25   describe to us what that was for?
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 1  A     So a Fulbright Scholarship is a scholarship that's
 2  given to somebody who's a researcher or a teacher to go over
 3  to another country and then do either teaching or research
 4  in that other country.  In my case, I did it in Denmark.
 5  Q     Dr. Goodrich, have you been accorded any awards for
 6  your work in the area of computer science?
 7  A     Yes, sir.  If we go to the next slide, we see a sample
 8  of my awards.
 9  Q     And if you could, just take us down through this list
10  of samples of these awards and explain to us briefly what
11  each one is for.
12  A     Certainly.
13        So the first award is the IEEE Computer Society
14  Technical Achievement Award.  This is given to someone who
15  has done a body of work over the course of ten or more years
16  and then has a significant impact and is recognized as being
17  a technical achievement.  And I got this for work I did in
18  the general area of pair line distributed computing.
19        If you go next to the next award, this NSF Research
20  Initiation Award, this award is given to young researchers
21  at the beginning of their careers, and this is an award I
22  got early in my career, in fact, one year after I had
23  started at Johns Hopkins University.
24        And then if we go to the next award, this DARPA Spirit
25  of Technology Transfer Award, this was an award I got for
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 1   work on a project that was funded by the Department of

 2   Defense to do research on digital certificates and computer

 3   security and then try to transition this into the private

 4   sector.

 5        And we got an award for effort for trying to take our

 6   inventions -- that first patent was the -- the fruit of that

 7   labor, and then licensed that and try to move it into the

 8   private sector.

 9        And then finally, this last award, the Brown University

10   Award for Technical Innovation is also for that same project

11   because we were partnering with Brown University from

12   Providence, Rhode Island, to do this transfer.

13   Q    Now, I put up on the screen, Dr. Goodrich, the cover

14   page for each of the patents that was invented by Dr. Stefik

15   that we have in suit.  And were you here earlier today to

16   hear Dr. Stefik testify?

17   A    Yes, sir.

18   Q    Okay.  Now, why are there four patents of Dr. Stefik

19   that are involved in this suit?  What's the difference

20   between the four of them, if there is any?

21   A    Yeah.  So if -- if -- indeed, I think these patents are

22   in the jury notebook, as I heard from the Court -- identify

23   that.

24        And each of these patents shares in the middle that

25   broad part in the middle that's -- Dr. Stefik referred to as
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 1   the specification.  That was him describing the details of

 2   how -- you know, what he -- the things that he was

 3   inventing.

 4        And then when you go to the end and you see those

 5   claims at the end, each of those claims is going to identify

 6   some aspect of what he was inventing and then say this is,

 7   you know, a claimed invention for that aspect.

 8        And that's why there's four different ones, because,

 9   you know, kind of broken apart into these different patents

10   that has all these different claims at the end.

11   Q    Well, starting with -- and I'll refer to each of these

12   patents by the last three numbers, as I think others have

13   been doing.

14        Starting with '859 patent, what is the claimed

15   invention in that patent?

16   A    So the '859, when you look at -- at the -- the claims

17   at the end and -- and try to understand what it's trying to

18   claim, it's talking about a system where you have what they

19   call a requester mode, a way of requesting a content, as

20   well as a server mode on the device itself, that the device

21   can enforce usage rights with content in a server mode on

22   the device itself.  So that's sort of how you can

23   characterize the '859.

24   Q    And the '956 patent, what's the claimed invention

25   there?  What feature of Dr. Stefik's work does that patent
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 1   claim as the invention?

 2   A     So the '956 patent is addressing customer devices, so

 3   like a smartphone or a tablet where you would have some

 4   means for determining that that device is trusted.  So some

 5   way of being able to determine that that device is trusted.

 6   Q     And the '072 patent, what feature of Dr. Stefik's work

 7   does that claim as the invention?

 8   A     For -- so for the '072, that's referring to a method,

 9   so a system of, you know, steps you can perform.  In this

10   case, the steps you would perform in order to receive

11   content and then enforce the usage rights on that content.

12   Q     And the last is the '007 patent.  What aspect or

13   features of Dr. Stefik's work is claimed as the invention in

14   that patent?

15   A     So the '007 or double 07 patent, as we like to call it,

16   is -- is devoted to the functionality of the store server

17   side.

18        So we talked about how there's this customer device and

19   there's that store repository.  The '007 patent focuses on

20   the -- the store side of -- of his invention.

21   Q     Dr. Goodrich, have you prepared something that you

22   could use, just to get us started, that would give us an

23   overview of what it is that the Stefik patents describe?

24   A     Yes, sir.  I have several slides that explain that.

25   Q     So on this slide, if you could just explain to us, what
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 1   are you describing with respect to the overview of

 2   Dr. Stefik's patents?

 3   A      So this is just a -- a visual way to sort of focus in

 4   on what are some of the common elements that each of the

 5   Stefik patents has in it.

 6          So in particular -- in fact, as we heard even

 7   Dr. Stefik himself say, we have the -- the devices are

 8   trusted, that usage rights govern how content may be played

 9   and that studios and publishers can trust their content is

10   safe because usage rights are attached or treated as

11   attached to the content and are persistently enforced.

12   Q      Where do those usage rights actually exist?  Where do

13   they exist when they're being enforced in Dr. Stefik's

14   invention?

15   A      So when they're being enforced, they would be on the

16   device -- on the customer's device themselves.

17   Q      And how do the studios and publishers, the content

18   owners, the people that own the movies and the TV shows and

19   the books that are going to be sold using Dr. Stefik's

20   invention, how do they know that their content is safe when

21   they use Dr. Stefik's invention?

22   A      So that's what I'm trying to illustrate here on this

23   part of the slide, that there's these means by which the

24   repository software treats these usage rights as being

25   attached to the content.
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 1        And so there's some kind of means by which they're
 2   treated as attached; hence, you can't play the movie or view
 3   the book without respecting those usage rights.
 4   Q    Let me stop there and go back.  I want to be clear on
 5   this.
 6        Can the movie or the book or the TV show, when it's on
 7   the device, actually be played and -- if these usage rights
 8   are not present on the device at the same time as the
 9   content?
10   A    No, sir, that's not possible.
11   Q    Now, do you have a drawing that you've created that you
12   could use to help us sort of visually put these pieces
13   together that you've just described to us as part of
14   Dr. Stefik's overview of his invention?
15   A    Yes, sir.
16        So, again, this is just a high-level illustration, but
17   it's showing the main components of what would be in a
18   Stefik-implemented digital rights management system.
19   Q    Okay.  And what are we looking at down here in the
20   lower right-hand corner?
21   A    So in the lower right-hand corner, we're illustrating
22   how the movie studios and book publishers would be entering
23   their content; if it's a movie file or a book file, into the
24   system, that they would be going up to this trusted store
25   repository up at the top.
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 1   Q     And what happened up there in that trusted store

 2   repository that's part of Dr. Stefik's system?

 3   A     So in the trusted store repository is where the -- the

 4   movie in this case would be protected in some way using

 5   encryption as one of the tools that's described in the

 6   Stefik patents and that then any kind of request for that

 7   content would then be processed by the store repository.

 8   Q     And I believe -- I'm sorry.  I hit a button too soon

 9   and moved ahead.

10         Now, what happens down on the customer repository or

11   the client device that you've shown down there?

12   A     So with respect to that trusted customer device in the

13   lower left-hand corner, this would be, again, a smartphone

14   or a tablet where a customer would request that they wanted

15   to, say, buy a movie or rent a movie and make this request

16   through the Internet using communications integrity, as we

17   heard today, to make this request to the trusted store

18   repository.

19   Q     Now, in Dr. Stefik's patents, how does he make sure

20   that the repositories are what we call trusted devices or

21   trusted systems?

22   A     So he has this notion of the three integrities that

23   guarantee that repositories are trusted in his definition of

24   what it means to be trusted.

25   Q     And what are the three integrities that Dr. Stefik
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 1   describes in his patent?  Just remind us of those three

 2   things.

 3   A    Certainly.

 4        So, again, these three integrities are known as

 5   physical integrity, communications integrity, and behavioral

 6   integrity in the support of usage rights.  And I've

 7   excerpted a little portion from the -- in this case, the

 8   '859 patent that describes all these different elements.

 9   Q    Now, what did Dr. Stefik's patents describe with

10   respect to what usage rights look like, what they are, what

11   kind of format they take?  Have you created something that

12   can show us that?

13   A    Yes, sir.

14        If we go to the next slide, we see an example from the

15   patent that -- that -- that shows a description of a usage

16   right.  So this is -- a description means it's in -- it's in

17   a format where the computer can understand it and -- and

18   codes that now the computer can understand.

19        So, for example, if you look over here in the left in

20   this Figure 10, which came -- comes right out of the patent,

21   we see this right code 1050, which is a code for the usage

22   right.

23        So some kind of a number, 5 or 10 or 20, some code that

24   the computer would understand that corresponds to a usage

25   right, like play a movie or play a rental movie or view a
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 1  book.  These kinds of things would be that code that would

 2  be here.

 3       And I've color-coded this in yellow to indicate that

 4  over here from this Table 1, we see an example of such a

 5  code that would be a code to tell you if something was a

 6  loaner copy of, say, a book and that then -- okay, this then

 7  is a usage right for viewing a loaner copy of a book.

 8  Q    What about the green that you've got identified there,

 9  this status information?  How does Dr. Stefik's patent

10  describe what that status information might look like?

11  A    Right.  So if we look down here -- I've also included

12  on the slide the Court's definition of usage rights that are

13  indications that are attached or treated as attached to a

14  digital work and indicate the manner in which the digital

15  work may be used or distributed, as well as any conditions

16  on which use or distribution it premised.

17       And in the screen portion, I'm highlighting some of the

18  conditions.  These are extra things you would have to check

19  in order to see, hey, am I actually allowed to do that, view

20  a book or play a movie?

21       And some examples we see here from this Table 1 are,

22  hey, if this is a loaner, is it in the time window that

23  you're allowed to do a loaner?  Maybe there's a 30-day

24  loaning period you're allowed to do a loan.

25       And then, for example, with a movie, if you started to
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 1  watch a movie, maybe you only have a certain time remaining,

 2  and so that remaining time will tell you:  Hey, I've only

 3  got a certain amount of time remaining before I have to

 4  finish watching that movie.

 5       And that would be another condition that would have to

 6  be checked to see if you're allowed to watch it.

 7  Q    And I see you've got something here also color-coded in

 8  orange, and what is it that you're identifying there?

 9  A    So in this orange part, we're now talking about the

10  part of a description of a usage right that would be the

11  means by which you would be treating as attached this usage

12  right to the content.

13       And in this example, it's highlighting various

14  identification information.  So if you have some kind of an

15  identifier, as we call it, a name or a number that names and

16  identifies the content, then this repository software might

17  use that to then say:  Now I know which usage right I apply

18  it to.  It's this movie, the one with this identifier.

19  Q    Now, were you here when Judge Gilstrap gave his

20  preliminary instructions to the jury?  It was this morning.

21  A    Yes, sir, I was here.

22  Q    And you recall hearing Judge Gilstrap explain that we

23  all have to follow the definitions that he's provided for

24  certain of the claim terms?

25       Do you remember hearing that?
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 1   A     Yes, sir, I heard that.

 2   Q     And one of those claim terms, I believe, is that "usage

 3   rights" claim term that you've got down there at the bottom?

 4   A     That's correct.

 5   Q     And have you applied the Court's constructions, his

 6   definitions for those important claim terms in your analysis

 7   here?

 8   A     Yes.  Throughout my analysis, I consistently applied

 9   all of the definitions that we got from the Court, his

10   so-called Court claim constructions.

11   Q     Now, if you will, take a look at how the Court defined

12   usage rights, and point out for me where in that definition

13   it says that the usage rights have to travel with the

14   content to get to the customer's device.  Point that out for

15   us.

16   A     It's not in this definition that it has to travel

17   together.

18   Q     There's no definition, there's no part of that

19   definition that requires that the usage rights and the

20   content have to always move together when they're going to

21   the customer's device?

22   A     No, sir.  No, it's not -- it's not in the Court's

23   definition.

24   Q     Have you seen in any of the other Court's construction

25   the definitions for the claim terms anywhere where those
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 1  definitions require that the usage rights must travel with

 2  the content when they arrive at the user's device?

 3  A    No, sir.  To the best of my recollection, none of the

 4  other claim terms have that requirement in there.

 5  Q    Now, sir, I believe you've highlighted in this

 6  definition of usage rights this term "treated as attached."

 7  Can you give us an example of how usage rights and content

 8  are described as being treated as attached in Dr. Stefik's

 9  patents?

10  A    Certainly.  I have a slide, I believe, for that.  If we

11  go to the next slide.

12       So this is information that we can -- we can learn from

13  the patent.  And, indeed, if we go down to the bottom

14  left-hand corner of many of my slides, I'll be providing the

15  evidence and information that I rely on to reach a lot of my

16  conclusions.

17       In this case, it's coming from one of the patents,

18  again, which they all share the same specification.  In this

19  case, Figure 7, Tables 1 to 2, and from Column 9, Line 7 to

20  31, to see what is it in the patent that it's teaching about

21  "treated as attached," how can we understand how usage

22  rights are treated as attached to the content that they want

23  to then enforce rules for.

24  Q    Well, what did you find when you looked in the patent

25  to see what Dr. Stefik had described as the ways in which
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 1   the software that enforces the usage rights can treat the

 2   content as attached to the usage rights?

 3   A    So I show in here an example of Figure 7 from the

 4   patent that shows a lot of these different mechanisms in one

 5   figure to see how usage rights would be treated as attached.

 6        So the first one we see is an identifier for the

 7   content.  That's, as I mentioned earlier, some kind of a

 8   name or a number that identifies the content, identifies

 9   what movie we're talking about or what book we talk about.

10        In the real world, this could correspond to, say, some

11   kind of inventory number for some people who have worked in

12   a store and may be familiar with that.

13        Then the next thing we see is an address, a memory

14   address, as another way the usage rights can be treated as

15   attached to content.

16   Q    If I could just stop you right there.

17   A    Sorry.

18   Q    Now, this expression "memory address," if you could

19   just expand on that a little bit for us.  In your world, in

20   the computer science world and computer world, what do you

21   mean when you're talking about a memory address?

22   A    Right.  So in the computer world, the computer memory

23   is -- especially in modern computers, even handheld devices,

24   it's huge.  And so we have to have some way of identifying

25   the different parts of the memory.
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 1          And so we call that the address -- we typically believe
 2   they're numbered, the different parts of the memory -- or
 3   give them names, sometimes called file names, that would be
 4   ways so that you could identify portions of the memory.
 5          And then this address would be a way of identifying a
 6   certain place in that memory, in this case, where you would
 7   go and find the content for a usage right.
 8   Q     And if you could continue, this third bullet point you
 9   have there, what are you identifying there for -- that you
10   found in Dr. Stefik's patents?
11   A     Right.  So the next thing we see is a pointer or a
12   link.  And, indeed, in Figure 7, we see a number of
13   different pointers.
14          And these are ways that digitally you can connect up
15   different things in a computer that it would say, hey, you
16   know, I have this data structure here, and I give a pointer
17   over to this data structure over there, and now they're
18   linked up.
19          So you could have, say, a pointer from a usage right
20   pointing over to the content that it goes with, and then
21   that would be a link or a pointer as a way of treating as
22   attached that usage right to the content.
23   Q     And you used the term there "data structure."  Could
24   you just give us a brief explanation, again, of what you
25   mean when you use the term "data structure"?
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 1   A     Right.  So a data structure is just an organized way of
 2   organizing information, or data, as we call it, and this
 3   table that's shown here in Figure 7 is an example of a data
 4   structure.
 5        It's just an organized way of putting our information
 6   together so that we know in this example the first thing is
 7   an identifier, the second thing is an address, the next
 8   thing is a link, and then that fourth thing would be this
 9   rights portion that -- that description of a usage right I
10   had shown in the previous slide, that would be there.
11   Q    And then I think you have a final bullet point here.
12   You call out a description key.  Why are you bringing that
13   to our attention?
14   A     Because that's another thing -- it's not here in
15   Figure 7, but it's also disclosed in the patent that another
16   way that you can treat as attached a usage right to the
17   content it goes with is using a decryption key.
18        So maybe in that usage right, you'd store a decryption
19   key and store that content in encrypted form, and then you
20   could only decrypt that content using the decryption key
21   that goes with the usage right.
22        And that would be another way that you have this usage
23   right treated as attached to the content.
24   Q    And I notice you have an image down here of a key fob
25   in a car.  What are you trying to describe or get across to
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 1   us with that?
 2   A    So this is an example that we saw also with Mr. Baxter
 3   on the opening discuss, as, again, just an analogy of the
 4   real world of how things are treated as attached in a
 5   digital way that people might already be familiar with.
 6        And that is you have a key fob that's in the factory.
 7   They match up in a digital way that key fob to your car, so
 8   when you buy it and you get the keys from the dealer that,
 9   you know, I can use this key fob and just push of a button
10   and even if I'm not even touching the car, it can unlock.
11        But I could also in this example have a physical key
12   that I could push into the lock and turn, and that would be
13   attached, whereas, if we just are pushing the button and not
14   connected to it, it would be treated as attached.
15   Q    Do you recall a moment ago you identified for us these
16   three integrities that are part of defining a trusted system
17   or a trusted device in Dr. Stefik's systems?
18   A    Yes, sir.
19   Q    Can you explain to us, please, a little bit more about
20   what Dr. Stefik described for each of those integrities and
21   what they entail.
22   A    Certainly.
23   Q    I want to start with physical integrity.  What is that,
24   and what did Dr. Stefik describe it as?
25   A    Okay.  So if we go to the next slide, I believe I have
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 1   a discussion about physical integrity.  And what I show up

 2   here in the upper left-hand corner is the Court's definition

 3   that -- that the Court gives us based on the description

 4   from Stefik that physical integrity means preventing access

 5   to information in a repository by a non-trusted system.

 6        And I also excerpt here from the patents a little

 7   excerpt that talks about physical integrity refers to the

 8   integrity of the physical devices themselves.

 9   Q    I also notice that you have on here this Table 2 from

10   Dr. Stefik's patents titled Repository Security Levels.

11   What is Dr. Stefik describing when he describes these

12   repository security levels in the context of his invention?

13   A    So what I'm trying to show here by highlighting this

14   Figure 2 from the patent is for us to understand what --

15   when the Court gives us this definition of preventing access

16   to information, to understand what does that mean in the

17   context of the patents?

18        Does it mean that it has to be able to withstand a

19   nuclear attack on the content?  No.

20        What it's saying is that there's various levels of

21   security.  And then after you at least get to a basic

22   security, which level -- is called Level 2, then you would

23   have what Dr. Stefik calls his trusted repository.

24        But if you want to have something even stronger with

25   more security, go to Level 3.  Even more, go to Level 4.
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 1   And you have extra things to make it more and more and more

 2   secure.

 3        Then you can even go all the way up to Level 10 and

 4   have something that's super secure that each of these

 5   levels, from Level 2 all the way up to 10, would still be

 6   considered preventing access.  It would just be relative to

 7   whatever security level that you're at.

 8   Q    And communications integrity, what did Dr. Stefik

 9   describe in his patents, when you looked at those patents,

10   with respect to what he meant by the term "communications

11   integrity"?

12   A    So if we go to the next slide, I give and highlight

13   here the Court's definition for communications integrity,

14   which, again, comes from the patents and is informed by the

15   specification.

16        And that is:  Only communicates with other devices that

17   are able to present proof that they are trusted systems; for

18   example, by using security measures, such as encryption,

19   exchange of digital certificates, and nonces.

20   Q    And what is this Figure 3 that you're pointing to here

21   from the patent?  Why are you pointing to that?

22   A    So there's a number of figures -- Figure 3 is just one

23   example of them -- that shows communications as arrows,

24   and -- and highlights with -- often with dotted lines how

25   those communications need to be holding this communications
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 1  integrity, that you have to know who you're talking to.

 2      And as an example way to keep that secure, you can

 3  encrypt the communication lines.

 4  Q    And why did you highlight the portion of Dr. Stefik's

 5  patents that you have in the lower left-hand corner here?

 6  A    Because this also informs us about what -- what is the

 7  purpose of the communications integrity.  The communications

 8  integrity refers to the integrity of the communications

 9  channels, going through, say, the network that would happen

10  between repositories.

11      And then roughly speaking, communications integrity

12  means that repositories cannot be easily fooled by telling

13  them lies.

14  Q    Now, behavioral integrity, that third integrity, what

15  did you find when you looked to see what Dr. Stefik

16  described for behavioral integrity in his patents?

17  A    So if we go to the next slide, I highlight here at the

18  bottom of the slide now two definitions that we got from the

19  Court that relate to behavioral integrity.  And, again,

20  these came from the Court's understanding of how the Stefik

21  patents describe behavioral integrity.

22      The first definition is requiring software to include a

23  digital certificate in order to be installed in the

24  repository.  And then that definition itself has a special

25  term with "digital certificate" in it.
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 1          So we also have a definition for digital certificate,

 2    which is assigned digital message that attaches to the

 3    identity of the possessor.

 4    Q    And I see that you've copied some portions of one of

 5    Dr. Stefik's patents here, the '859 patent, and you've

 6    highlighted portions of it.  Why have you done that?  What

 7    are you drawing our attention to there?

 8    A    So I'm highlighting this -- this part at the top first

 9    that says:  Behavioral integrity refers to the integrity of

10    what repositories do.  And what repositories do is

11    determined by the software they execute.  We're talking

12    about computer-based systems.

13          So if you want to make sure that a repository is doing

14    what it's supposed to do, then you want to make sure that

15    it's running the software it's supposed to run.

16          And then farther down, the way that we know it's going

17    to be running the software it's supposed to run is that that

18    software came with a digital certificate and is -- we're

19    requiring that that digital certificate be included in order

20    to install the software and that digital certificate gives

21    us, as a signed digital message, an attestation of where

22    it's coming from.  It's coming from someplace we trust in

23    this case.

24    Q    Do Dr. Stefik's patents have a figure that can help us

25    understand where each of these three integrities apply with
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 1   respect to a particular sample of one of his trusted

 2   repositories?

 3   A    Yes, sir.

 4        If we go to the next slide, we see an excerpt.  This is

 5   Figure 12 from the patents.  And then I've added some little

 6   icons to illustrate the different functionality.  But this

 7   figure overall is a block diagram for the architectural

 8   pieces of a repository, as an example of how you can build

 9   the repository in the Stefik system.

10   Q    Well, I see here that this processing means 1200 is at

11   the top.  What is that referring to?

12   A    So, generally speaking, we use this word "processor" or

13   "processing means" to refer to the brains of a computer.

14   And this is the part of the computer -- sometimes we also

15   call it the CPU or central processing unit -- that would be

16   executing the instructions of the software to do the

17   functionality of, in this case, a repository.

18   Q    And I see that you've got next to that a processing

19   element 1201 and a processing memory 1202.  What are those

20   elements?

21   A    So those are different pieces of the processing means.

22   First, just the processor part, the brains itself that

23   understands instructions and knows how to execute them, and

24   then the memory from where you would store the software that

25   the -- that the -- the processor is running, as well as any
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 1   sort of working stores that would need to do its

 2   instructions, to perform its software.

 3   Q     And then to the lower portion of this figure, you've

 4   highlighted and added some icons to these two boxes at the

 5   bottom.  What are those depicting?

 6   A     So this storage system at the bottom is the place

 7   that's highlighted in a repository where you would be

 8   storing those descriptions of the usage rights in -- encoded

 9   in a way that a computer can understand, as well as storing

10   the content, like the file for a movie or the file for a

11   book.

12   Q     And where does physical integrity come into play in

13   this trusted repository or trusted device?

14   A     So physical integrity, indeed, comes into play right

15   there with that memory, that you want to be protecting

16   the -- and -- and preventing access to that information by

17   non-trusted systems.

18   Q     What about --

19   A     So we're trying to keep hackers out of our content to

20   be able to break in and watch a movie without our

21   permission.

22   Q     What about communications integrity?  Where does that

23   come into play?

24   A     That comes in over here on the right, this external

25   interface.  Because this is a place where a repository would
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 1   be communicating to the outside world.

 2        It would be connecting, say, through the Internet to

 3   what I'm showing here, this -- this store repository to

 4   communicate to request usage rights, to request content.

 5   And you don't want hackers coming in there to listen in on

 6   your communications or steal the content while it's flowing

 7   to you.

 8   Q    And where does behavioral integrity come into play

 9   here?

10   A    So behavioral integrity play -- comes in in that

11   processing means, that, again, behavioral integrity refers

12   to what a repository does.  What a repository does is

13   dictated by its software.

14        So we want to make sure that no hackers can come in and

15   install software into our repository with -- without our --

16   you know, saying that that would be allowed.  Of course, we

17   wouldn't let a hacker in our system anyway.

18        But the point is you don't want to have anyone, let

19   alone a hacker, to be able to install software without your

20   permission, without a digital certificate saying that this

21   is allowed.

22   Q    In Dr. Stefik's patents, is there any reference or

23   description of what we call or what you refer to as

24   encryption and decryption?

25   A    Yes, sir.
```

1   Q   Before we get to the patents, could you just give us an

2   explanation in -- in computer science terms? What does it

3   mean? What is this encryption and decryption doing?

4   A   Right. So we heard a little bit about this this

5   morning, but let me just say this again. That encryption

6   prevents access to information by systems that do not have a

7   decryption key.

8   So you have some kind of what we call a key, which is

9   just a really big number that's too big to guess that allows

10   you to -- together with having that number and knowing the

11   algorithm, the step-by-step recipe for how we do encryption,

12   that you can take something like a book and encode it into a

13   scrambled up version of itself, that if you do not have

14   that -- that key, nobody can understand what's inside of it.

15   But then if you have that key, you can then use that

16   and reverse that process -- what we call decryption -- and

17   take that encrypted and scrambled version of the book to --

18   and then use that key together with this description --

19   decryption method to get the original form back again.

20   Q   Now, can encryption and decryption keys, can the keys

21   themselves be encrypted?

22   A   Yes, indeed. I've got a little highlight of how that

23   can happen as well. So if you want to have another level of

24   security, when we talked about -- like with those levels of

25   security in Table 2, you could even, as an extra level of

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 1   security, encrypt your decryption keys you need to unlock

 2   books and movies.

 3       And it would be that same process, that if you have yet

 4   another key that does the encryption for a key, you get a

 5   scrambled version of that key, and then without that super

 6   key, you can't decrypt the key to then decrypt the content

 7   and get the content out.

 8   Q    And where did Dr. Stefik patents describe the uses of

 9   this encryption and decryption tool?

10   A    So if you go to the next slide, I've just highlighted,

11   in this case, just three places where in the Stefik patents

12   it talks about how you can use encryption in a trusted

13   system.

14       First, up here, I talk about how you can use it for

15   communication and how the Stefik patents talks about using

16   encryption to achieve that communications integrity.  You

17   can encrypt the messages that you send back and forth

18   between repositories.  That's one.

19       Another one you can do is with respect to sending of

20   content, that anytime you want a server, let's say, to send

21   content to a client, they can first encrypt the content and

22   then send that encrypted version of -- to the -- to the --

23   to the client, and then only again somebody who had that

24   encryption key would then be able to unlock it at the other

25   end.
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 1        And then finally, the Stefik patents talk about how you
 2   could be using encryption for storing content and that if
 3   you wanted even, again, to get the extra level of security,
 4   not only could you have this encryption when you
 5   communicate, but you could also be storing the content in
 6   your content storage where you're storing it in encrypted
 7   form as well.
 8        And all of these three different ways of using
 9   encryption are disclosed in the Stefik specification.
10   Q    At the beginning of your testimony, I asked you what
11   you had done and what your role was in this case.
12        Do you recall that?
13   A    Yes, sir.
14   Q    And I think one of the things you pointed out was you
15   had analyzed the accused Apple products, correct?
16   A    That's correct.
17   Q    Have you created something that you can use to help us
18   understand what you found out from your analysis of how the
19   Apple products work with respect to the DRM scheme that they
20   have implemented?
21   A    Yes, sir.  I have a number of slides that illustrate
22   some functionality in the Apple system.
23        And throughout this discussion, I'm going to be using
24   the Apple iPad Air as a representative product for how this
25   system works.  But based on my analysis, all these things
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 1   that I'm saying about the iPad Air also applies to the

 2   iTunes system in general.

 3   Q     And does it apply to the other Apple devices that use a

 4   DRM scheme, the iTunes DRM scheme?

 5   A     Yes, sir.

 6   Q     And those other Apple devices are like the iPhone, for

 7   example?

 8   A     For example.

 9   Q     Okay.  And any of the other accused Apple devices in

10   this case?

11   A     That's right, sir.

12   Q     And I noticed down here that you have some PX numbers,

13   Plaintiff's exhibit numbers.  Could you just explain to us

14   what you've got down here and why you're putting them on the

15   various slides?

16   A     Certainly.

17         So up here on the podium, I have here a number of these

18   exhibits that are all referenced with these PX numbers.

19   That stands for Plaintiff's exhibit, and then they're given

20   a number.

21         And these typically are going to be documents that were

22   put into evidence by the Plaintiffs, but these documents are

23   actually coming from Apple.  These are usually Apple

24   documents.

25         And when I'm citing to them on these slides, I'll be
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 1  putting those numbers in the lower left-hand corner,

 2  typically, on these slides.

 3       And then there's one other exhibit, PX-1190 -- 0.01,

 4  that is actually an example of an iPad Air that I hope to be

 5  able to show the jury and do a little demonstration a little

 6  bit later, if possible.

 7  Q    And is -- are these exhibit numbers that you identify

 8  on these slides, is that the source of the information that

 9  you're reporting and showing us on these presentations and

10  in your testimony today?

11  A    Yes, sir.  These would be examples of -- of places

12  where I would find evidence to support the various

13  conclusions that I reached in my analysis.

14  Q    Well, what do you do when you look inside the Apple

15  iPad Air, this representative device that you're looking at

16  here?  What did you find?

17  A    So if we opened up -- figuratively open up an Apple

18  iPad Air, what we see inside of it is several different

19  hardware components.  And if you do a breakdown -- in this

20  case, it's a breakdown coming from a company called

21  ifixit.com -- we see all these different components.

22       And in particular, the one I focused on is this thing

23  that's called the motherboard.  This is where a lot of the

24  electronics, if you will, for the iPad is found.  And in

25  particular, what we see on here is that there's a component
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 1   of a CPU, central processing unit.

 2   There's RAM. That stands for random access memory.

 3   And then there's also this other memory that's a persistent

 4   memory that would survive even when you turn the iPad off.

 5   Q   And I see that you have some reference numbers down

 6   here, Plaintiff's Exhibit Nos. 1140, 1149, and 1150. What

 7   are those documents?

 8   And if you could just pull them out and just -- just

 9   show them to us so that we understand exactly what you're

10   referring to when you identify your source materials.

11   A   Yes. I just put out an example. This is PX-1150, and

12   this is a description of, in this case, how the different

13   functionality can be used inside of iTunes. And then this

14   is an iPad Air, would be how that would be used.

15   Q   And where is that document from? Who authored that

16   document?

17   A   That's an Apple document.

18   Q   Are all of these documents Apple documents?

19   A   Yes, sir. In addition, there's also one of the PX

20   numbers that's the source code for the Apple iTunes system.

21   Q   And we'll get to that in a minute.

22   A   Yeah.

23   Q   Now, what did you find, just generally, when you

24   analyzed the iTunes system? What were the major components

25   that you ended up looking more deeply into as part of your

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 1   analysis?

 2   A     So what I found is that the iTunes framework of how the

 3   system works consists of -- of several pieces that lines up

 4   with that picture that we talked about earlier, that there's

 5   up here an iTunes Store that has inside of it servers that

 6   take care of content and usage rights.

 7        And there's also the customer devices that go along

 8   with that to request content and be able to play that

 9   content according to the rules.

10   Q     And what is it that we're looking at down here on the

11   right-hand side?

12   A     So the right-hand side, there's also just figuratively

13   showing movie and TV studios and book publishers, which I

14   refer to generally as the content providers, as the entities

15   that are putting the content, like movies and books and TV

16   shows, into the iTunes Store system.

17   Q     And just generally, what is the overall process?

18   What's going on here when somebody wants to order a movie,

19   for example, from an iPad through the iTunes Store?

20   A     Right.  So, typically -- this is just at a high

21   level -- what happens is that a request, let's say for a

22   movie, goes up to that iTunes server.

23        And at that moment, together with help from something

24   that's called that FairPlay server, usage rights are created

25   for that content, and then the usage rights and the movie
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 1  file are sent to the customer.
 2  Q    And can that movie that gets down -- that gets put on
 3  that customer device, can it be played by the customer if
 4  those usage rights aren't also present on the device?
 5  A    No, sir, that's not possible.
 6  Q    And I notice you have here some Plaintiff's exhibit
 7  numbers.  Please bear with me.  I'm just going to read them
 8  into the record for completeness purposes.
 9          MR. THOMAS:  Plaintiff's Exhibits 1006, 1010,
10  1015, 1019, 1021, 26, 27, 28, 46, 52, 60, 96, and 1138.
11          Thank you for bearing with me on that, but I have
12  to have the record or else my paralegal is going to tell me
13  that I skipped something.
14  Q    (By Mr. Thomas) So what are those documents, Doctor?
15  A    So these are various Apple documents that, for example,
16  talk about how these different components work.
17      So there would be some documents that talk about how,
18  for example, FairPlay DRM functions in this system or how
19  the customer would make a request for content, these kinds
20  of things, as well as this No. 1138 which corresponds to the
21  source code that I've been alluding to.
22  Q    Now, stepping back, before that request for a movie can
23  be made, how does a customer actually set up an account with
24  the iTunes Store?  Have you looked at that?
25  A    Yes, sir.  I have a slide on that, if we go to the next
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 1   slide.

 2       So when a customer creates an iTunes Store account at

 3   the very beginning of when they're setting up their account,

 4   the Apple DRM or FairPlay generates an account key and sends

 5   it to the customer in the data structure that's called a

 6   Keybag.  And this KeyBag is then stored on their device in a

 7   safe way.

 8       And inside that Keybag is this account key.  It's one

 9   of these super keys I was referring to before.  That's a key

10   that's used to unlock other keys that then are used to

11   unlock content.

12   Q    Okay.  And I noticed that you have some cites down here

13   in the lower right-hand corner.  What are those citations

14   to?

15   A    So in this case, the cites are to Dr. Smedley's source

16   code report.  Again, we're going to hear from Dr. Smedley

17   later on, probably tomorrow, talking about the source code.

18   He wrote a report that I relied on to reach conclusions

19   about how the source code works.  And I'm citing to several

20   paragraphs here on that slide.

21       And I'm also citing here to deposition testimony, which

22   is another type of evidence that I looked at where, in this

23   case, an Apple engineer was deposed and questions and

24   answers, and based on his responses, I also can make

25   conclusions about how this system works from him explaining
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 1   it.
 2   Q     So after an account is set up and account keys are
 3   generated, could you walk us through, please, what's
 4   happening on this iPad when a customer wants to buy a movie
 5   or rent a movie or a TV show or a book?
 6   A     Certainly.
 7         So if we go to the next slide, I just have an
 8   illustration of how that would -- would go about.  You first
 9   start by, you know, turning on your iPad, finding the icon
10   for the iTunes Store, and then pushing that little button to
11   bring up the iTunes Store.
12         And then if we go to the next slide, what we see is the
13   screen grab from the iTunes store.  If we look to the
14   bottom, we see various tabs of the kind of media content
15   that you can order through the iTunes Store.
16         If somebody's interested in a movie, they would push
17   that movie button and select that they want to watch a
18   movie, and then up pops a screen that talks about the
19   different movie choices that you would have.
20         You can scroll through using your finger to look for
21   different movies that might catch your interest.  And then
22   when you find one -- in this case, Avengers, let's say --
23   you would push that button to say maybe I want to consider
24   buying or renting this movie.
25   Q     And what does the iTunes's system do on the device
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 1   after you've selected one of these movies or TV shows or

 2   books to buy?  What's the next thing it's going to do?

 3   A    So then if you -- if you push that little icon, you

 4   push that button, then up pops the screen that says -- gives

 5   you choices about what you can do with respect to, in this

 6   case, that movie.

 7        You can either buy it or rent it, in this case, for

 8   various prices.  So in this case, you could see that you

 9   could say buy it for 19.99 or rent it for 5.99.

10   Q    And what did you decide to do just by way of an

11   example?

12   A    So by way of example, I rented the movie and chose to

13   rent it.

14   Q    Okay.  And what happens next after a user or customer

15   decides they are going to rent a movie from the iTunes Store

16   to use and watch on their Apple device?

17   A    So then what happens next is typically they're given

18   the choice that they can either download it now or download

19   it later.

20        And this term "download" is referring to, you know,

21   whatever sort of WiFi connection they have or cellular

22   connection they have for their iPad to have the movie file

23   sent to their device.

24   Q    And what did you choose by way of an example here?

25   A    I chose to download it now.
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 1   Q     And then what happens when you select that download now

 2   button?

 3   A     So then there's a number of things that have to happen

 4   next, one of which you need to confirm your purchase that --

 5   when you did that registration at the beginning, you put in

 6   your user name and password.

 7         Now you need to confirm that to make sure that it's not

 8   just somebody who is playing with your iPhone and -- and --

 9   or iPad and -- and trying to buy something without your

10   permission.

11         You now are going to be confirming your purchase and --

12   and, indeed, also confirming to buy it or rent it with a

13   credit card that you would have stored with the iTunes

14   Store.

15   Q     Now, before that user name and password is actually

16   sent up to the iTunes Store, has the Apple device and the

17   iTunes Store computers been setting up a communication and

18   talking to each other?

19   A     Yeah.

20         So there's a number of things that have been happening

21   sort of behind the scenes that I haven't shown here with

22   respect to this interaction of a user with the device

23   itself.  And I have some slides that come next that talk

24   about what is sort of happening behind the scenes, if you

25   will.
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 1   Q    Okay.   So if you could, walk us through what is

 2   actually happening that enables this request to purchase or

 3   rent a movie and what happens in response to that request

 4   within the iTunes system.

 5   A    So what happens first is when -- when the customer

 6   device shown here down in the lower left wants to be setting

 7   up a communication with the iTunes Store, the first thing it

 8   does is it tries to set up a secure communication, what we

 9   call the SSL or secure socket layer connection.

10        And the way that this protocol -- this SSL protocol

11   works is that the iTunes Store, after it's been contacted,

12   it sends down to the customer device a digital certificate,

13   one of these signed digital messages attesting, in this

14   case, that you would be talking to the iTunes Store.

15        And then that digital certificate comes down to the

16   device and then is used to establish one of these

17   encryption/decryption keys that both sides are now going to

18   use for when they're talking back and forth to each other

19   and communicating.

20   Q    And does that have any relevance to any of the

21   integrities that Dr. Stefik describes in his invention?

22   A    Yes, sir.

23        So one of the reasons why I'm highlighting this is,

24   indeed, this is an example of communications integrity.

25   Q    And how is it that this establishment of a secure
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 1   socket layer connection provides communications integrity as
 2   Dr. Stefik defined that term?
 3   A    Because, first of all, that digital certificate came
 4   down from the iTunes Store that identified you're talking to
 5   a legitimate, in this case, Stefik-style repository.
 6        And, likewise, the customer also is sending up their
 7   credentials, user name and password, so that the iTunes
 8   Store knows that they're talking to a legitimate customer
 9   device.
10        And we're using encryption on the line so that if
11   anybody was trying to eavesdrop and listening in to our WiFi
12   connection in the same room with us, they would not be able
13   to understand anything about our messages because they would
14   not have that encryption/decryption key.  Only we would.
15   Q    And what is this source material, Dr. Goodrich, that
16   you relied on to confirm that what you just described to us
17   is actually occurring when this secure communication path is
18   established between the customer and the iTunes Store?
19   A    So I cite here to the bottom of the slide, as you see,
20   deposition testimony from Mr. Ward, an Apple engineer, at --
21   on Pages 17 and 43, and also Dr. Smedley's source code
22   report at Paragraphs 10 to 11, 83 and 84, and PX-1138, which
23   is that source code itself.
24   Q    Maybe we could stop there.  If you could -- and I
25   apologize.  I should have asked you this earlier.
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 1         When you say source code, what exactly are you
 2   referring to there?
 3   A    So source code is the description that programmers
 4   would type into a computer to describe the functionality of
 5   how software works, and it's -- it's written in -- in a
 6   computer language that has a very formal type of a syntax to
 7   it of how it has to look and how it has to be understood.
 8   And then that is then converted into a form -- what we call
 9   a binary version -- that a computer can understand.
10         And so the source code gives us a way to understand, as
11   humans, to be able to look and be able to understand how the
12   computer is going to function when it's executing these
13   instructions.
14   Q    After this secured socket layer connection is
15   established, what gets transmitted going back to where you
16   were describing to us this purchase request process where
17   somebody wanted to rent a movie to download to their device?
18   A    Yes.
19         So if we click ahead, what happens next is that device
20   will send that account sign-in information, confirming to
21   the iTunes Store this is a legitimate iPad device.  And I
22   cite two cites from Ward's deposition for that.
23         And then the device will send up a purchase request, in
24   this case, because they wanted to rent The Avengers movie,
25   and that request goes up to the iTunes Store that says:
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 1   Hey, I want to rent this movie.
 2   Q    Now, what does the iTunes Store do when it receives
 3   that request for a specific title, a specific TV show or
 4   movie or book?
 5   A    So the next thing that happens is that the iTunes Store
 6   is going to send back to the customer something that's known
 7   as a purchase response.  It's a message that gets sent down
 8   that has a lot of information in it.
 9        It's got a ton of stuff in there that I highlight here
10   with this graphic, just highlighting some of the information
11   that's in this purchase response message that functions as
12   usage rights.  It's going to include all the things that the
13   Stefik patents require of usage rights.
14   Q    If you could, just walk us through these elements that
15   you've identified that get put into this purchase response
16   by the iTunes Store.
17        And what is this purchase response?  What's the --
18   the -- the reason for it?  What's its purpose?
19   A    So the purpose is that it's coming down to give to the
20   customer device, in this case, an iPad, the various, you
21   know, manners of use and conditions from which they can then
22   play the movie -- in this case, a rental -- according to
23   those rules.
24   Q    And what information is there that's necessary in this
25   purchase response that's created at the iTunes Store to
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 1   allow that customer to play that movie when the customer

 2   wants to?

 3   A     Right.   So if we look at the first element, there's

 4   something that's called the AdamID -- sorry, I screwed up --

 5   AdamID.   That is an identifier that identifies, in this

 6   case, The Avengers movie.   It's a number for The Avengers

 7   movie, and that's assigned when that movie gets put in from

 8   the studios.

 9   Q     That word "AdamID," that's kind of a strange word.   Do

10   you know where it came from?

11   A     That's just -- that's just a term that Apple calls it.

12   I don't know why they call it the AdamID.

13   Q     And what else?   What's the next piece of information

14   that's in that purchase response?

15   A     The next thing is this Internet address or what we call

16   in computer science the URL.   That's a place on the Internet

17   where the movie can now be sent to the device.   And I'll

18   talk about that a little bit later.

19         It's in the context of this company called Akamai

20   that's going to be the means from which that movie is sent

21   to the device.

22   Q     And the next entry, the next piece of data in that

23   purchase response is this term that you call "isRental,"

24   what is that?

25   A     So the "isRental" field is a field in this case that
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 1  identifies that this is a usage right for a rental movie;

 2  that they're getting permission to watch a movie that's a

 3  rental.

 4  Q    You used a term there you said "field."  If you could,

 5  just again, for purposes of making sure we're all on the

 6  same page, what does that mean in the context of your field

 7  of expertise, computer science?

 8  A    Okay.  In computer science when we use this word

 9  "field," we're just referring to a place inside.  In this

10  case, a data structure of a purchase response that has a

11  name.  And the name is the field.

12        So in this case, we call it the "isRental" field.  And

13  then it would have some value associated with it like yes or

14  no or a number or some other thing that would go along with

15  that field.

16  Q    If you could, just go ahead and walk us through what

17  the rest of these pieces of information are in the purchase

18  response.

19  A    Right.  So the next information I'm highlighting here

20  is this thing called the "explicit field."  And this is an

21  identifier that's used for books and music if it contains

22  sexually explicit content.  That's highlighted here.

23        And then if the device -- if the owner of that device

24  wants to put on some restrictions for, say, parental

25  controls, they can -- then the system would then be honoring
```

1   the explicit flag and would not be showing explicit content

2   if you gave your iPad to your son or daughter that's under

3   age.

4   The next field down is this field that's called the

5   "kind field." This tells you what kind of usage right you

6   have. Do you have a right to watch a movie, or is it a

7   right to view a book, or is it a right to watch a TV show or

8   a rental book if it comes -- or a rental movie if it comes

9   with that "isRental" field in combination?

10   And then the next one down is "rating." This is used

11 for movies and TV shows that tells the rating of that

12 content. Again, with parental controls, now you could

13 restrict and have conditions based on that rating of whether

14 or not you would show the movie if it's rated R and you're

15 not -- say you're not allowing for your device to play

16 R-rated movies.

17 Q   And what about the rest of these rental-duration,

18 rental-start-date, rental-expiration-date,

19 rental-expiration-seconds-from-now. What are those?

20 A   Yeah. So, if we look at those next set of fields, each

21 of them has to do with various conditions that go along with

22 rental movies, that you have a certain duration, typically

23 30 days, that you can watch the movie. That you also have a

24 start date of when to start. There's an expiration date of

25 when to end. Expiration seconds, usually these are given in

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 1   seconds for, you know, various aspects of that -- of that

 2   rental.

 3        And the same information is echoed in this other part

 4   that we talked about, this SINF information that -- I mean,

 5   this other part I haven't talked about yet, this SINF.  This

 6   last part, this SINF, which we usually just refer to it as

 7   the SINF, has within it the content key.

 8        This is the key that you need to then decrypt the

 9   Avengers movie that's also coming down now.  And that key

10   itself is encrypted with the account key for the device for

11   that user.

12   Q    And the word "SINF," is that just an abbreviation for

13   something?

14   A    Yeah.  It's an abbreviation for security information in

15   the Apple system.

16   Q    And then what happens with this purchase response once

17   the iTunes Store puts it together in response to a request

18   for a particular piece of content, a movie?  What does it do

19   with it?

20   A    So it sends it down to the customer device, and then

21   the customer device processes that usage rights and stores

22   it in a way that would be useful on the device itself.

23   Q    Now, how is the actual movie file moved into the

24   customer's device so that that purchase response has

25   something to work with?
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 1  A     So if you go to the next slide, I have an illustration

 2  of how this process works.  And it's using this technology

 3  that was invented by this company called Akamai.

 4       And they invented this technology that's called CDN, or

 5  content delivery network, which is a way to -- that owners

 6  of content, in this case, iTunes, that has content they want

 7  to distribute out on to the various users in an Internet,

 8  how that can happen really, really fast.

 9       And one of the problems with the Internet is that when

10  you send content out, as Dr. Stefik talked about today, it

11  has to be broken up into little packets.  And then those

12  packets have to be sent through all different kinds of

13  routers and computers on the Internet to finally arrive at

14  the final place.  And there's a lot of delays that can

15  happen with that.

16       And so with respect to how this Akamai CDN works is

17  that a customer to Akamai, in this case, Apple, can

18  preposition what we call cache, store temporarily these

19  movie files out on different servers that are spread out all

20  across -- actually, the whole world.

21       They've got hundreds of thousands of these servers all

22  over the world such that when somebody wants to receive a

23  movie, they don't have to ask for it from Timbuktu; they can

24  ask from a server that's right next door.  And then it comes

25  right to them really fast.
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 1  Q     And how does the customer know where to go on the

 2  Internet to get that movie that is going to be using the

 3  information in that purchase response?

 4  A     So that is in -- I'm just showing here sort of as a

 5  graphic that when that purchase response comes down, it has

 6  in it that URL Internet address so that those usage rights

 7  are treated as attached to the movie so that that person can

 8  just use that URL to go and have that movie sent to them on

 9  that last link to finally receive that movie that ultimately

10  started from the Apple system.

11  Q     So maybe we can go back through this again, and you can

12  just walk us again through this, how this content gets

13  delivered to the user so that the user has the movie that is

14  going to be watched using the information in that purchase

15  response, walk us through that again.

16  A     Right.  Just, again, to walk through the process, the

17  user gets that purchase response that has within it the URL,

18  the place in the Akamai system shown here where that movie

19  is now stored close to them.  And that's going to be a

20  special Internet address just for them.

21        Then they go and send a message to that Akamai server

22  that then pushes that out to them so that they finally get

23  it.

24  Q     Now, when that movie is on that Akamai server or on any

25  of these other routers or computers that are part of the
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 1   Internet, does it have -- what condition is that movie in?

 2   A    That movie is -- is in encrypted form during that

 3   process so that it's coming down in that encrypted state so

 4   that anyone who is listening in on those communications

 5   cannot know anything about the content inside.

 6   Q    Now, does Akamai or anybody else that owns any of these

 7   other computers that are used to move this information

 8   across the Internet, do they have the decryption key --

 9   A    No, sir.

10   Q    -- that can be used to open up that movie?

11   A    No, sir.  They don't have that decryption key with

12   them.

13   Q    Who holds on to that decryption key?  Who controls

14   that?

15   A    Apple controls that.

16   Q    Okay.  And is there -- at any time that that movie is

17   in that Akamai content delivery network, can it be accessed,

18   can it be watched at all by anybody if they don't have the

19   information in a purchase response that comes from Apple?

20   A    No, sir.  It would not be possible.

21   Q    And I see here that you have a citation just in the

22   lower left-hand corner of this, and what is that, this

23   source of your information?

24   A    This is -- this is a public document that you -- that I

25   found on the Internet and included in my report that
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 1   describes how the Akamai system -- in this case, it's a

 2   marketing document to their customers like Apple about how

 3   they can deliver content faster to customers using this --

 4   this system.

 5   Q    A moment ago, if you recall, do you remember using the

 6   word "cached"?

 7   A    Yes, sir.

 8   Q    Can you explain a little bit to us again -- what does

 9   it mean when you use the word "cache" in the context of how

10   Apple is using Akamai to move content over the Internet to

11   its customers?

12   A    Right.  So in computer science, we refer to this topic

13   of -- of -- of caching as a way of temporarily holding on to

14   something so that it then can be moved on to some other

15   place.

16        And we distinguished that from storing something, which

17   would have more of a permanence to it.  Because in the

18   Akamai system, these movie files are just getting moved all

19   over the place in realtime reacting to how customers are

20   requesting content.

21        And part of their technology is to understand how to

22   move that stuff around so that anytime somebody is

23   requesting a file, it will get delivered to them very

24   quickly.

25        And so -- and indeed, I found in the deposition of one
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 1   of the Apple engineers, Mr. Gentil, where he's talking about

 2   this and explaining how content, he would distinguish as not

 3   stored in the Akamai servers, but instead is cached and then

 4   pushed out to the customers.

 5        And he even disclosed in his deposition that he used to

 6   work for Akamai, and so he was intimately aware of how this

 7   whole process works.

 8   Q    Now, is there ever an instance where an Apple customer

 9   sends a request to Akamai to get a movie, a book, or a TV

10   show --

11   A    Somebody --

12   Q    -- other than through that purchase response?

13   A    Oh, the only way that you can know where to go to get

14   that movie sent to you is with that URL that comes in the

15   purchase response.  That's the only way.

16   Q    So can a customer ever start off a request to get

17   access to a movie, a TV show, or a book from Apple by

18   initially sending a message to an Akamai machine?

19   A    No, sir.  They -- they wouldn't know where to send it.

20   They would -- it would just be like just guessing at random

21   and lucking out.  It would never happen.

22   Q    Okay.  Now, you recall a moment ago, you were going

23   through these elements of the purchase response?

24   A    Yes, sir.

25   Q    Do you have something that you've created that you
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 1   could use to explain to us what happens in the -- in the

 2   Apple device, the customer's device, to that purchase

 3   response when it arrives at the customer's device?

 4   A    Yes, sir.  I have some slides on that.

 5   Q    Okay.  What are we looking at here, Dr. Goodrich?

 6   A    So what we're -- what we're seeing here is an

 7   illustration of what happens when the purchase response

 8   comes to the device, and then as I mentioned, it's -- it's

 9   split up and stored at various places on the device so that

10   then these various manners of use and conditions can enforce

11   the usage rights for the movies.

12   Q    And what's the first piece of information in that

13   purchase response that gets moved somewhere after that

14   purchase response arrives?

15   A    So what I show here is the first thing that happens is

16   that security information, that SINF that has inside of it

17   that content key, the key that can unlock The Avengers

18   movie, that is then gone and -- and stored with the content

19   itself.

20   Q    Now, is that content key in the clear, as they say?

21   A    No, sir.  That content key is itself encrypted with the

22   account key for the device to provide that extra level of

23   security I talked about.

24   Q    And where does that account key exist?

25   A    That's in this Keybag, if it's a purchased movie, and
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 1 it's also in something that's called a Rentalbag, if it's a

 2 rental movie.

 3 Q   And where does that Keybag and that Rentalbag come

 4 from?

 5 A   That comes from Apple.

 6 Q   And what happens to the rest of this information in the

 7 purchase response? Can you explain to us where it gets

 8 moved to within the Apple device?

 9 A   Yes, sir.

10   So that AdamID, that identifier for the movie, that's

11 put into something that's called the media library. And now

12 we have an ID for that movie with respect to that AdamID.

13   Then the next thing is that there's a storage location

14 for where to find the content. After you've stored the

15 content on the device, it then puts into this table a

16 pointer, an address, if you will, of where you can go and

17 find the content and find that SINF that goes with it.

18 Q   And if you could -- if you could just give us a little

19 bit more explanation of what is this media library that

20 you're illustrating here. What's its purpose in the Apple

21 device and in the Apple system?

22 A   So this media library is a database, as we call it in

23 computer science, that has information about the different

24 movies or TV shows or other media, even music, that you

25 would have stored on your iPad, and it has in it visualized

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 1   here in terms of rows where every row would correspond to a

 2   different media file.

 3        You have that AdamID, and then this iPad storage that

 4   would link back to where you'd find the content for that, as

 5   well as some other things that I'm highlighting here as

 6   well.

 7   Q    Okay.  And so what else gets put into that media

 8   library?

 9   A    So other information that comes down, again, coming

10   from that purchase response is isRental information, if it's

11   a rental, the "kind" field that tells you what kind of

12   content it is.

13        And then all these different conditions, the rental

14   conditions, explicit, the ratings for parental controls, all

15   these other things are also stored there in that table.

16   Q    Now, what happens to the purchase response on the Apple

17   device, the customer's device, after the information in that

18   purchase response -- response is split up and moved around

19   and stored in these various locations?  What happens to that

20   purchase response?

21   A    So after all that information has been split up and

22   stored and now we have it all on the iPad in the way that

23   can control how we watch movies, then this purchase response

24   is deleted.  It's not needed anymore in its original form.

25   Q    Now, once all this information from the purchase
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 1   response is put into the appropriate locations, as you've

 2   just described them, in the Apple device, when can the

 3   customer choose to play that piece of content, that Avengers

 4   movie?

 5   A    Now that everything is there, we've got the usage

 6   rights and the content together on the device, they can play

 7   it anytime anywhere at that point.

 8   Q    Do they have to be connected to any other system in

 9   order to play that movie once they've got all this

10   information, the purchase response, and once they have the

11   movie?

12   A    No, sir.  They don't have to be connected to the

13   Internet anymore at that point.

14   Q    Now, have you created something that you can just show

15   us now and demonstrate to us exactly what happens when that

16   customer decides that they want to play that movie after

17   they've gotten the information that you've just been

18   describing to us loaded on to their devices?

19   A    Yes, sir.  If we go to the next slide, I'm now

20   reverting back to looking just on the device itself and

21   going through a walk-through of sort of what happens on the

22   device.

23        In this case, I'm illustrating this scenario where a

24   family is out camping.  They're away from the Internet.

25   They're not connected even to a cellular network.  And they
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 1  want to watch a movie that they've downloaded.
 2  Q    Now, I see in the title you've got this term "playing
 3  offline."  Just describe to us what you mean by that, how
 4  you're using that term.
 5  A    Right.  This -- this term "offline" is used by us
 6  computer scientists to refer to when you're not connected to
 7  anything, like a network, which we would being online.
 8       Say we're offline.  We're out camping.  You can't send
 9  me email.  I won't know, but I'm going to watch an Avengers
10  movie with my family even in that scenario.  That's what I'm
11  illustrating here.
12  Q    So now somebody has the movie and the information from
13  the purchase response on their device.  What do they do if
14  they want to play it?
15  A    So the next thing they do is to push the videos icon on
16  the iPad, and then this is going to do a number of things to
17  then give them -- show them the choices that they have with
18  respect to what they can do next.
19  Q    What's -- what is it doing -- well, actually, before we
20  go into what is it doing, what does it display?  What does
21  the device display to the customer, the owner of that
22  device, when that owner chooses videos and chooses a
23  particular type of video -- let's say rental videos?
24  A    Right.  So what is going to pop up for them is the
25  choices that they have with respect to that content.  And
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 1   the system, the -- the -- the videos app in this case,

 2   consults that media library to then look at that "kind"

 3   field and that "isRental" field I talked about and then

 4   based on the combination of those two fields and those

 5   conditions that go along with it, like explicit and rating

 6   and those rental conditions.

 7        So based on those indications, plus those conditions,

 8   will then only show to the user things that they have a

 9   right to watch.  It could be a purchased movie that would

10   come up as movies.

11        If it's a rental, it would come up in the rental's tab.

12   If it's a TV show, it would come up in the TV shows.  But

13   regardless of what category it's in, the only things that

14   are shown to the user are things that they have a right to

15   watch.

16   Q    And what happens if they choose one of these particular

17   movies -- in this case, let's say they chose Avengers.  What

18   is going on on that device now?

19   A    So what happens next is, if you click on this Avengers

20   little icon in the rental choice, then if you've downloaded

21   it, there's a little triangle up in the corner I'm showing

22   here that is colored in black.

23        And that's the play triangle.  And then if they then

24   play that, they push that little triangle, it will play the

25   movie for them, in this case, as a rental.
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 1   Q     Now, how is it that the device knows what usage rights

 2   to apply to a particular movie, a particular choice that the

 3   owner of that device has, like how does the device know what

 4   rights to use with this Avengers: Age of Ultron movie?

 5   A     Right.  So in this case, what occurs is they look up in

 6   that media library and see that for that content -- in this

 7   case, The Avengers movie that has that certain AdamID -- and

 8   there's the link of where to go to find it.

 9         And then this indication of the manner of use that it's

10   a movie, that it's a rental.  There's these various

11   conditions.  It could then link over to the movie, look at

12   that SINF, that security information, find in there

13   information about what account key needs to be used.

14         It will go and then look in the account key Keybag or

15   the rental Keybag, if it's a rental, and together from all

16   this information that's gathered, it will see that this is a

17   rental, it will see those conditions, it will test those

18   conditions, and only show the movie if that user is allowed

19   to then be watching the movie according to these various

20   timer and other conditions that are set in the usage rights.

21   Q     Okay.  So what is it that the software, that is the

22   computer code on the iPad, is using as part of its -- I

23   think we called it enforcement software, at least that's

24   what -- did you hear when Dr. Stefik was describing his --

25   his invention and he used the term "enforcement software"?
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 1         Did you hear that, Doctor?

 2    A     Yes, sir.

 3    Q     Okay.  What is it that the enforcement software on this

 4    iPad device is using to link, you know, or treat as attached

 5    this particular movie to this particular set of usage

 6    rights?

 7    A     So there's actually -- I've identified three different

 8    places where we see how usage rights are treated as attached

 9    to the content by this enforcement software, if you will, in

10    this case, the videos app and the FairPlay software that's

11    on the device.

12         And these include, first, this iPad storage location of

13    where to go in the device itself to then go and find the

14    movie, find that SINF, see where the -- you know, what

15    account key to use from your Keybag or Rentalbag.

16         The second place we see is the content decryption key

17    in the SINF itself.  It gives us this decryption key that is

18    just for the Avengers movie, that, again, it's encrypted

19    with some account key or Rentalbag key to then unlock that

20    content, decrypt it so we can watch it.

21         And then finally this AdamID that identifies that that

22    number that was assigned to The Avengers movie when it was

23    put into the Apple system that identifies this is for The

24    Avengers movie.

25         So all three of these different mechanisms are ways
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 1   that the usage rights are treated as attached to the

 2   content.

 3   Q    And how is it that these -- you mentioned this

 4   Rentalbag key or the account key.  How is that Rentalbag key

 5   or account key used to access the content key so that the

 6   movie can be watched?

 7   A    Yes.  So if we go to the next slide, I have this little

 8   illustration of how this process goes.

 9        Again, it provides that extra level of security that I

10   alluded to that you have this account key or rental key

11   that's on the device, associated with the device, and the

12   user for that device, that then is used to decrypt the

13   encrypted content key that is in that SINF, that security

14   information, SINF, to then come out and now unlock that

15   content key.

16        Now that you have the unlocked or decrypted content

17   key, you then can use that to decrypt the movie and now

18   watch the movie.

19   Q    And --

20   A    I have a number of cites down here to support the

21   conclusions that I have for that functionality.

22   Q    And I was just going to ask you, sir, about that.

23   Those references you have in the lower left-hand corner, I

24   believe it's Plaintiff's Exhibit 10 -- 1022, 1028, and the

25   source code, Plaintiff's Exhibit 1138.  And what are those
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 1   Plaintiff's Exhibits 1022 and 1028?   Just remind us.

 2   A    So just as an example, 1028 is a description called the

 3   FairPlay white paper that describes how FairPlay works, the

 4   DRM system that Apple uses.

 5       And then that 1138 is the source code itself that

 6   Dr. Smedley wrote his report about.  And then I'm using as a

 7   reference here and -- and -- and referring to some

 8   paragraphs from his report, 38 to 42, and 61 to 70, that I

 9   relied on to get my understanding of how this system works

10   in addition to those documents that I've cited.

11   Q    And aside from Dr. Smedley's reports, these Plaintiff's

12   exhibits, who created those documents that you're relying on

13   as your foundation for what you just described to us?

14   A    Apple created those.

15   Q    So what happens now, Doctor, when the account key or

16   rental key is used to decrypt the content key, is used to

17   decrypt the movie?  What's going to happen?

18   A    So now the device can what we call render -- it's a

19   term -- play the movie, if you will, so that we now can, you

20   know, just watch it even if we're out camping.

21       And I have some Plaintiff's exhibits, 1059 and 1138, as

22   well as Dr. Smedley's source code report as Paragraph 61 to

23   70 to support this conclusion.

24   Q    Now, sir, just going back briefly to this Slide 43,

25   if -- the information in this media library, where did it
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 1   come from again?
 2   A    It came from that purchase response that came down from
 3   the Apple's iTunes Store server.
 4   Q    And if the information that came down in the purchase
 5   response associated with that Avengers movie, if that wasn't
 6   on the device, could somebody watch The Avengers movie on
 7   that device?
 8   A    No.  The video's app, if they -- if they clicked on the
 9   video's app, it wouldn't know where to go to find it.  There
10   would be no way to locate it in that case.
11   Q    What about if it was a book and if the information that
12   came down in the purchase response or the equivalent of a
13   purchase response for a book, what if that information, that
14   usage right wasn't on the device?  Could the customer read
15   the book they paid for?
16   A    No, sir.  It's a similar kind of scenario.  With books,
17   it's a little different library.  It's called the iBooks
18   library, but it has the same kind of information, the same
19   kind of functionality.  The iBooks app, the books app would
20   not able to find the content to even go and play and look
21   for it.
22            MR. THOMAS:  Your Honor, at this time, with the
23   Court's permission, I would like to have Dr. Goodrich just
24   briefly demonstrate using the exemplary iPad that he has up
25   there on the stand with him for the jury the process of
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 1  actually pulling up and playing a piece of rented content

 2  that Dr. Goodrich already has on the device.

 3            THE COURT:  All right.  Is there objection?

 4            MR. PRITIKIN:  There is an objection.  May I

 5  approach for a moment, Your Honor?

 6            THE COURT:  Approach the bench.

 7            (Bench conference.)

 8            MR. PRITIKIN:  There was no testing disclosed in

 9  the report.  And, in fact, in his deposition, he was told

10  that he hadn't tested the iPad; he hadn't tested the iPhone.

11  And for him now to come forward and purportedly do a

12  demonstration, you know, it's contrary to that.  It goes

13  beyond what the report disclosed.

14            MR. THOMAS:  Your Honor, it's just a

15  demonstration.  It's exactly what I've just put up there on

16  that screen step by step.  It's just real life.  I mean, I

17  think the door is opened already.  If the question was

18  whether or not this gentleman got to discuss what's going

19  on, on the device, that should have been done many slides

20  ago.

21            THE COURT:  Are you suggesting, Mr. Pritikin, that

22  this particular iPad is not a normally functioning --

23            MR. PRITIKIN:  Oh, no, no, no.  No, that's not my

24  suggestion.  And, you know, I didn't have an objection of

25  his describing how it works.  I mean, that certainly was
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 1 within the scope of the report. But demonstrating it is --

 2 does involve using it, actually using it himself, and he's

 3 never tested it.

 4   MR. THOMAS: He's actually --

 5   MR. PRITIKIN: There's nothing in the report about

 6 having tested it, and he disavowed that in his deposition.

 7   MR. THOMAS: Actually, that's not true. This

 8 gentleman did say he has a personal iPad on which he has

 9 loaded and downloaded movies in a personal capacity before.

10 And that was front and center at his deposition and his

11 report. He's used these devices --

12   THE COURT: Explain -- explain to me, Mr. Thomas,

13 exactly what you purport to have him do.

14   MR. THOMAS: He's going to get up, and he's going

15 to do exactly what you or I or Mr. Pritikin would do, Your

16 Honor, to put on the screen whatever movies to be able to

17 watch on that device as a rental.

18   He's going to hit it, the thing's going to come

19 up, he's going to press play, and then it's going to start

20 to play. That's it. It's no more and no less than any

21 customer would do.

22   THE COURT: All right. I'll -- I'll overrule the

23 objection. I'll allow the demonstration as long as it

24 follows the scope that you've outlined.

25   MR. THOMAS: Indeed, Your Honor.

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 1                MR. PRITIKIN:  Okay.

 2                (Bench conference concluded.)

 3                THE COURT:  All right.  The objection is

 4    overruled.

 5                Let's proceed with the demonstration as discussed.

 6    Q    (By Mr. Thomas) And, Dr. Goodrich, if you could, just

 7    please step up there in front of the jury and -- so that

 8    they can all see, and just take them through the steps just

 9    as you described it here on the screen.

10         Show them what one actually looks like and explain to

11    them each step as any normal consumer would do to play a

12    piece of content that they've downloaded on to that device.

13                THE COURT:  Just a minute.  If you're going to do

14    that, we need to use the handheld microphone so that

15    everybody can hear.  And given that you only have two hands,

16    I'm not sure how that's going to work.

17                THE WITNESS:  Maybe we can put it on the stand,

18    and I can have it in front of me there.  Is this a portable

19    stand?

20                THE COURT:  If you'll make sure you raise your

21    voice, Dr. Goodrich.

22                THE WITNESS:  I will do my best, Your Honor.

23    A    May I proceed?

24    Q    (By Mr. Thomas) Please do, Dr. Goodrich.

25    A    What I'm going to show first is turning on the iPad,
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 1   using the button, the home button, and then swiping to see

 2   the various icons that are shown by that.

 3       And the first thing I'm going to do is to bring up the

 4   settings on the device and turn on the airplane mode just to

 5   confirm now we're in airplane mode.  We're not connected to

 6   any cellular connection.  The Bluetooth connections, all

 7   those connections to the outside world are turned off.

 8              THE COURT:  Let me -- let me stop you for another

 9   minute.

10              Mr. Pritikin, if anybody from your trial team

11   would like to stand at the end of the jury box and watch,

12   you certainly have that opportunity.

13              MR. PRITIKIN:  Thank you, Your Honor.

14   Mr. Chandler will do that.

15              THE COURT:  Okay.  The other way, Mr. Chandler,

16   right around the corner.

17              All right.  Go ahead, Dr. Goodrich.

18              THE WITNESS:  Thank you, Your Honor.

19   A    So the next thing I'm going to do is to show what I

20   showed in those -- that illustration of bringing up this

21   videos app.  And, again, as I mentioned, it's not connected

22   at all to the Internet, and I'm now showing the different

23   rentals that are on this device.

24       Yesterday, I had started to watch Forest Gump.  That

25   now has expired, and so it doesn't have any indication that
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 1   I can watch it.  But The Avengers, which I've downloaded and

 2   I haven't started watching yet says underneath -- you can't

 3   quite see it, but it says:  Expires in 27 days.

 4        And so now I'm going to push that Avengers icon, and we

 5   see those choices that I had illustrated before.  And

 6   because I had downloaded it, now that triangle in the corner

 7   is shown in black, and it's -- as I mentioned, already

 8   checked -- the kind field is already checked -- rental field

 9   to show that this was a rental.

10        All that has already happened at this point.  And now

11   when I hit play, it now is going to ask me:  Do you want to

12   play this rented movie?  And it says:  It will expire one

13   day after you start watching it.

14        And, again, this is happening with us not connected to

15   any outside source.  There's no connection to the Internet

16   at all.  All this stuff is happening and being enforced on

17   the device itself.

18        So then if I hit "okay," it will now start to play The

19   Avengers movie, just like we saw in that illustration.

20        So let me just stop that here so we don't spend time in

21   court watching the movie.

22   Q    (By Mr. Thomas) Thank you -- thank you, Dr. Goodrich.

23   A    And that'll be as much as I'll show here.

24   Q    If you can return to the witness stand.  Thank you.

25   A    (Complies.)
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 1              THE COURT:  All right.  Mr. Thomas, continue with

 2   your direct examination.

 3   Q     (By Mr. Thomas) Dr. Goodrich, have you now looked at

 4   and considered whether or not all the features that you've

 5   identified in the Apple system on the device and how it's

 6   working, how that compares to the claims of the Stefik

 7   patents?

 8   A     Yes, sir, I have.

 9   Q     And have you prepared something that you can use to

10   identify for us where those key features are that we were

11   describing earlier?

12   A     Yes, sir.  I have a sequence of slides that will

13   illustrate that and -- and show my conclusions.

14   Q     Okay.  What are you talking about here?  What are you

15   going to show us?

16   A     So, first, I've just -- on this slide, just highlighted

17   in bullet form those main elements that are common to all of

18   the Stefik patents.  I'm just showing an example picture of

19   one of them here in the right-hand corner.

20         And that is first, that there is usage rights that

21   permit playing the digital content, that those usage rights,

22   according to that definition that we got from the Court,

23   indicate a manner of use and any conditions that may also be

24   included.  And they're also attached or treated as attached

25   to the content.
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 1            These are some of those essential elements that usage

 2    rights have to have in the Stefik patents.

 3            And then the second component is that these devices are

 4    trusted, that these are trusted repositories that have those

 5    three integrities.  And I'm showing that here as well.

 6    Q    What did you identify as something that indicates a

 7    manner of use and any conditions of use that would

 8    constitute usage rights that permit playing digital content

 9    in the Apple system?

10    A    So there was two places where I found this idea of both

11    an indication of a manner of use and conditions that go

12    along with that.

13            The first that I'm showing here is this isRental field

14    that comes down in the purchase response that indicates this

15    is a rental movie, and that's an indication of a manner of

16    use that somebody has permission to watch a rental movie,

17    and all those conditions that come along with that.

18            You have that 30-day window, but once you start

19    watching it, you only have 24 hours to finish, all that kind

20    of stuff, are those conditions that come along with that.

21            And then I make some conclusions here that the

22    Rentalbag is going to be opened and the information

23    requiring -- regarding the time restrictions on that rental

24    is obtained and checked when you play a rental movie.

25            And I'm citing here to Dr. Smedley's source code report
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 1   at Paragraph 71 for this conclusion.

 2   Q    Okay.  And what about the -- are there any other pieces

 3   of information in that purchase response that are checked

 4   when somebody goes to play something that they've rented or

 5   purchased?

 6   A    Yes, sir.  There's also that "kind" field I talked

 7   about before that tells you what kind of a usage right you

 8   have.  Do you have a right to play a movie, watch a book,

 9   play a TV show, play a song, these kinds of things.

10        And these also have optional conditions that come with

11   them in the form of those explicit and rating conditions

12   that -- I didn't show it in -- in my demonstration, but if

13   somebody puts on restrictions for parental controls, it asks

14   them to put in a four-digit PIN for the parent.

15        And then they can set what kind of ratings they'll --

16   they'll be willing to allow for viewing of content for

17   movies, for TV shows, whether or not books with explicit

18   sexual content can be viewed, and then anytime somebody

19   after that then brings up, say, that videos app or books

20   app, it won't even show them content that they're not

21   allowed to watch, according to those conditions.

22        So those conditions are checked and enforced on the

23   device even when you're not connected at all to the

24   Internet.

25        And from this -- for this conclusion, I cite to
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 1   Dr. Smedley's source code report at Paragraphs 20 to 22, 30

 2   to 32, 35, 45, 52, 55, 74, and 88.

 3   Q    And where is this information, this "kind" field

 4   information in the explicit rating conditions?  Where is

 5   that actually residing on the device when a customer goes to

 6   play a piece of content, a movie, read a book, watch a TV

 7   show?

 8   A    So that would be in one of those library databases,

 9   either the media library, if it's a movie, or the book

10   library, if it's a book.

11   Q    Now, other than looking at the source code and the

12   technical documents that you've told us about and that

13   you've shown us some of and that you've cited in this

14   report, is there any other documentation that you've seen

15   which leads you to believe that Apple's system necessarily

16   enforces usage rules with respect to how movies or TV shows

17   or books can be sold or rented to their customers?

18   A    Yes, sir.  I have a couple slides that illustrate my

19   findings on this.

20        So what I'm showing here is an excerpt from a contract

21   that I am citing to in terms of these PX numbers, between --

22   in this case, Sony Pictures Television Corporation and Apple

23   Incorporated.  And it's addressing what's identified here as

24   the content usage rules that both sides are agreeing to with

25   respect to how the content is going to be managed in the
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 1   Apple system.

 2        And it says here -- I'm just highlighting in yellow a

 3   little section that says:  Apple shall only authorize the

 4   transmission of a movie in the format specified in this

 5   agreement.

 6   Q    And, again, who is this -- who's this agreement

 7   between?

 8   A    This is, again, between Sony and Apple.

 9   Q    And what are the formats or rules that are recited in

10   this agreement that Apple is committed to enforce before it

11   is allowing its customers to have access to the

12   Video-On-Demand pictures from Sony?

13   A    So there's a -- there's a whole number of rules that

14   come next, and they refer to this notion of a security

15   solution.

16        And that's the language that this contract is using and

17   stating, that FairPlay is an example of something that could

18   be a security solution, but they're prescribing certain

19   conditions on -- if they're going to be putting their

20   content into the Apple system, what they want to make sure

21   that system maintains with respect to that security

22   solution.

23        And I've just highlighted a couple of those rules that

24   came -- that kind of stand out.

25        First, this 5(c) that says that this 24-hour clock has
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1   to be enforced. Like I showed -- that said -- you know,

2   remember when I said "okay" in the demonstration, where you

3   only have 24 hours to watch that movie? That's something

4   that we also see echoed in this contract that they wrote

5   with Sony Pictures.

6   And, likewise, there's also this Rule No. 8 that says:

7   Movies shall at all times be protected by a security

8   solution.

9   So it's referring to how movies are going to be

10 protected at all times, not just when they're on the servers

11 at the iTunes Store.

12 Q   So what did you conclude, Dr. Goodrich, with respect to

13 whether the Apple system has usage rights that permit

14 playing digital content and indicate a manner of use in any

15 conditions of use in the Apple accused infringing system?

16 A   I determined that based on this evidence that I saw,

17 that, indeed, there are indications of manners of use and

18 conditions that go along with those manners of use.

19 Q   And if those indications of the manners of use and

20 conditions of use are not on the device, on the customer's

21 device at the time that the customer tries to play whatever

22 they've bought from Apple, can that customer get what he

23 paid for?

24 A   No, sir. They can't play it.

25 Q   And if you could go on, what did you conclude about the

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 1   "are attached" or "treated as attached" to content?
 2   A    So I have some slides about that that come next, and
 3   that is that based on, again, as I cite to here,
 4   Dr. Smedley's source code report at those paragraphs I'm
 5   citing, there's actually four different places that usage
 6   rights are treated as attached to the content.
 7        And I -- I've identified them here.  I can go through
 8   them, if you like.
 9   Q    You can.  But before you do that, what is it that is
10   actually treating these things -- what is it that is
11   actually treating these things as attached?  What is it
12   that's doing this?  What's using this information?
13   A    It's the iTunes software that is doing this, these --
14   these various apps that I discussed and showed in my
15   demonstration are -- and also the software that's just doing
16   the functionality for buying content, getting the content.
17   All that iTunes software is what is enforcing these usage
18   rights to be treated as attached to the content that goes
19   along with it.
20   Q    And if so, if you could, just walk us through what it
21   is that you've identified as the way in which Apple's usage
22   rights are treated as attached to the movies, TV shows, and
23   books that it's selling and renting to its customers?
24   A    Certainly.
25        So I found four places, four different ways for how
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 1   these usage rights are treated as attached to the content.
 2        The first is that AdamID that identifies the movies and
 3   the books and is also used, for example, for re-downloading
 4   of content.
 5        The next I found is that URL, that Internet address
 6   that comes down in a purchase response, and then is a link
 7   to where you would go and have that digital content sent to
 8   you from Akamai.
 9        The next is the content key in the SINF, which is one
10   of those decryption keys for the content and is another
11   means for how those usage rights are linked to the content,
12   because only that decryption key can be used to decrypt that
13   particular movie.
14        And then finally, on the device itself, these usage
15   rights in the media library are linked to the content by
16   that storage location that tells you where to go over and
17   find that SINF inside it that has that account key name that
18   then links to your account key, Keybag or your Rentalbag.
19        And then with all that information, the usage rights
20   can then be enforced on the customer's device.
21   Q    So what was your conclusion with whether or not in the
22   Apple system the usage rights are treated as attached to the
23   movies, books, and TV shows that Apple sells or rents to its
24   customers?
25   A    I concluded, based on this evidence, that they are
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 1   indeed treated as attached.  And as the Court gave that

 2   definition of "attached" or "treated as attached," then it

 3   would be satisfying this definition of the Court for usage

 4   rights.

 5   Q    What did you conclude with respect to whether or not,

 6   in the Apple system, the Apple iTunes Store, computers, and

 7   the iPads, and iPhones, and other accused Apple devices in

 8   this case are trusted with respect to the digital rights

 9   management scheme that Apple uses?

10   A    Right.  So this next important component of the Stefik

11   invention is this notion that we have trusted repositories.

12   And the Court, again, has given us definitions that you have

13   to have physical, communications, and behavioral integrity

14   in the support of usage rights to satisfy that.

15        And so I have a number of slides that come after that

16   that show my conclusions with respect to whether or not

17   devices are trusted.

18   Q    Okay.  What did you conclude with respect to whether

19   the devices -- the customers' devices exhibit physical

20   integrity when Apple has those devices and designs those

21   devices to retrieve and purchase or rent content from the

22   iTunes Store?

23   A    So I determined there's actually a number of different

24   ways that on the customers' devices themselves, you are

25   achieving this physical integrity.  And remember physical
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 1   integrity is this idea of protecting information in support

 2   of usage rights from un -- untrusted systems.

 3        So the first place I saw that is the fact that digital

 4   content is stored encrypted on the device so that it's being

 5   protected while it's being stored on the device itself.

 6        The next level of physical security is that the content

 7   keys are protected in those SINFs.  And SINFs are encrypted

 8   themselves with account keys.  And so that -- the -- the

 9   information is also being protected.  Those -- those

10   decryption keys in the SINFs.

11        And then finally, these account keys, the things that

12   unlock the keys that then unlock the contact are themselves

13   protected and encrypted in Keybags or Rentalbags.

14        And they even use another technology that's called

15   Cloakware, an obfuscation in this system to protect that

16   that information, in support of usage rights, cannot be read

17   by someone who is an untrusted system.

18   Q    And I notice that you have some source of the

19   information that you're relying on to reach these

20   conclusions.  What have you identified down here in the

21   lower right-hand corner for us?  Just remind us.

22   A    Yes.  I'm identifying Dr. Smedley's source code report

23   at a number of different paragraphs, 20 to 28, 36 to 42, 61

24   to 70, 86, and 100 to 106, as well as deposition testimony

25   from an Apple engineer, a Mr. Farrugia in several places
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 1 that are shown here on the slide, and then finally two Apple

 2 documents that talk about the FairPlay system, PX-1041 and

 3 1043.

 4 Q   What about physical integrity on the iTunes Store

 5 servers, those computers that are running the iTunes Store?

 6 What did you determine with respect to physical integrity on

 7 those devices?

 8 A   So if we go to this -- this slide here, we see evidence

 9 I found that also indicates that those store servers, which

10 intuitively we would think have to be protected and be

11 secure anyway, because we're talking about Apple's servers

12 that are storing these contents, but it's even spelled out

13 in these contracts with the book publishers and the movie

14 studios that they, indeed, have to be protected in this

15 notion of how the Court has defined physical integrity.

16   So, for example, with respect to books, there's this

17 contract I found with HarperCollins eBook Agency that says:

18 Publisher materials in Apple's control or possession shall

19 reside on secure network servers or equivalent devices owned

20 or controlled by Apple or its contractors with restricted

21 access.

22   It says so right there in the contract. Likewise, for

23 videos, I found this excerpt from a contract between Apple

24 and MGM that says: MGM content shall reside on a network

25 serve, workstation, or equivalent device owned or controlled

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 1   by Apple --

 2             THE COURT:  Slow down, Dr. Goodrich.  You're

 3   reading too fast.

 4             THE WITNESS:  Sorry, Your Honor.  Thanks for

 5   reminding me.

 6   A    -- or its contractors and shall be reasonably secured

 7   with restricted access.  Any Terms of Service with respect

 8   to MGM content may be hosted and served only from a server

 9   owned or controlled by Apple or its contractors.

10        And then I've highlighted this last part:  Individual

11   MGM content will also be encrypted with its own unique key

12   on the server.

13   Q    (By Mr. Thomas) Dr. Goodrich, the -- there are other

14   content owners, movie studios, book publishers, TV shows

15   producers that allow iTunes and Apple to sell and rent their

16   content.  Have you looked at the agreements that those other

17   providers or content owners have with Apple?

18   A    Yes, sir.

19   Q    Do they have the same kinds of requirements with

20   respect to how Apple must protect their content when it's in

21   their system, in the Apple system?

22   A    Yes, sir.  They have a similar kind of language.  I

23   just excerpt this as two specific example.

24   Q    Now, I forgot to ask you that question a moment ago

25   when we were talking about the usage rules and you used as
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 1  an example.  Do you recall the Sony agreement --

 2  A    Yes, sir.

 3  Q    -- for Video-On-Demand?

 4       Are those same usage rules that you identified in the

 5  Sony agreement?  Did you look to see whether those usage

 6  rules and requirements are in the contract Apple has with

 7  the other content owners that allow Apple to sell and rent

 8  their content via the iTunes Store?

 9  A    Yes, sir.  I found similar usage rules in some of these

10  other contracts as well.

11  Q    Did you find it in all the contracts that you looked

12  at?

13  A    I believe for all the movie studios had similar

14  contract language.

15  Q    So what did you conclude, Dr. Goodrich, with respect to

16  whether the Apple devices -- when they're acting to either

17  enforce or create usage rights in a DRM scheme and the

18  iTunes Store servers, what did you conclude with respect to

19  whether those computers exhibit physical integrity as

20  Dr. Stefik's patents describe it?

21  A    I concluded that, indeed, these satisfy the Court's

22  definition for physical integrity.

23  Q    Did you consider communications integrity and how --

24  and whether communications integrity is exhibited and

25  implemented in the accused Apple system?
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 1   A    Yes, sir.  If we go to the next slide, we see an

 2   example of how I determined that there's, indeed,

 3   communications integrity as well.

 4        And what we have here is an excerpt from this

 5   deposition in this case of Mr. Ward, who was an Apple

 6   engineer, who is explaining about how the communications

 7   between the device and the iTunes Store are encrypted using

 8   that SSL protocol, that secure socket layer protocol, so

 9   that nobody can eavesdrop in on that communication, that you

10   know you're talking to the legitimate iTunes Store.

11        I'd already cited about how the devices are going to

12   authenticate themselves to the store.  So all these things

13   in combination show, indeed, there is communications

14   integrity in the iTunes system.

15   Q    And let me ask you this, Doctor:  These three

16   integrities, when do the devices, the Apple devices -- why

17   are they required in Dr. Stefik's invention to enforce and

18   implement these three integrities?  And what -- when does

19   the iPad have to be exhibiting these three integrities?

20   A    So if we -- if we look into the Court's definition for

21   repository or this word "trusted" as it's used in the

22   claims, we see that you have to have these three integrities

23   when you're in support of usage rights.

24        And that phrase is really important because it talks

25   about, you know, what in the system is using the software to
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 1   create or enforce those usage rights for content.
 2   Q    And does the iPad have to have or any other Apple
 3   device, does it have to exhibit these integrities in
 4   everything it does, emails, for example, or word processing
 5   programs?  Does it have to use these integrities then in
 6   order to be practicing Dr. Stefik's inventions?
 7   A    No, sir.  No, sir.  Because that -- those other things
 8   you had gave them as examples are not things that would be
 9   in support of usage rights.  And as a part of the Court's
10   claim definition for "repository" or "trusted," it's in this
11   context of being in support of usage rights.
12   Q    So what did you conclude, Doctor, with respect to
13   whether or not the Apple system you analyzed and you've been
14   telling us about today exhibits communications integrity as
15   Dr. Stefik described that in his patents?
16   A    I determined that it, indeed, does have this
17   communications integrity as the Court has defined that term.
18   Q    And next is behavioral integrity.  Did you look to see
19   whether or not the Apple devices and the iTunes Store
20   machines exhibit behavioral integrity when you evaluated
21   those systems?
22   A    Yes, sir.  I have some slides on that.
23        So, first, looking to the customer devices, the iPhones
24   or iPads -- and I was using that iPad as a representative
25   device for this.
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 1              MR. PRITIKIN:  Objection, Your Honor.  May we

 2   approach?

 3              THE COURT:  Approach the bench.

 4              (Bench conference.)

 5              MR. CHANDLER:  Your Honor ruled that this slide,

 6   they had to remove at the bottom the SINF was digitally

 7   signed.  That slide has not been changed.

 8              MR. THOMAS:  That's -- is this the new slide?

 9   My -- my apologies.  Can we take that down?

10              THE COURT:  It's down now, but they've just got

11   the -- the one with the red checkmarks on it up now.

12              MR. THOMAS:  Okay.

13              THE COURT:  Let me ask you while you're here, do I

14   understand you've got 81 slides to get through?

15              MR. THOMAS:  It's the claim charts, Your Honor.  A

16   lot at the end where I'm just going to walk through each of

17   the claim charts.

18              THE COURT:  We've got two members of this jury

19   that lives 60 miles away.  I'm not going to keep them too

20   late tonight.

21              MR. THOMAS:  In truth, Your Honor, it's going to

22   be about another 15 or 20 minutes for me, but I'll be done

23   by then.

24              THE COURT:  I don't see how you're going to get

25   through that many slides in 20 minutes.
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 1                    MR. THOMAS:  It's -- I'd -- I'd have to be pushing

 2   it, Your Honor.

 3                    THE COURT:  All right.  Let's finish your

 4   behavioral integrity, get your last red check on this slide,

 5   and then I'm going to call it a day, okay?

 6                    MR. THOMAS:  And may I have a moment to go back --

 7                    THE COURT:  Go check, yes.

 8                    (Bench conference concluded.)

 9                    THE COURT:  All right.  Let's proceed, Mr. Thomas.

10                    MR. THOMAS:  Yes, Your Honor.

11   Q    (By Mr. Thomas) I believe we had behavioral integrity,

12   and you were going to explain how behavioral integrity was

13   applied to the customer devices.

14   A    Yes, sir.  I believe we're on this slide here.

15                    MR. PRITIKIN:  Your Honor, I believe that slide is

16   up again.

17                    MR. THOMAS:  May we approach, Your Honor?

18                    THE COURT:  All right.  Approach the bench.  We're

19   going to get this straight one way or the other.

20                    (Bench conference.)

21                    MR. PRITIKIN:  The slide you and I were talking

22   about at the break --

23                    THE COURT:  Wait a minute, gentlemen.  She can't

24   hear you.

25                    MR. PRITIKIN:  The slide on my screen showed that
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 1   same line about the SINF being digitally signed.  That was

 2   the one that just came up on our monitor.

 3              MR. THOMAS:  But we only -- we only talked about

 4   Slide 63.  This is not Slide 63.  This is Slide 61.

 5              MR. PRITIKIN:  I'm sorry.  This is the one that we

 6   talked about when we came up here just three minutes ago.

 7   It's the one that has the language at the bottom about the

 8   SINF being digitally signed, and you were going to take it

 9   down.

10              MR. THOMAS:  I took it off this -- this slide came

11   off --

12              THE COURT:  Are you talking about the SINF being

13   digitally signed?

14              MR. PRITIKIN:  Yeah, the prior one.  This is the

15   slide that was just displayed again on our monitor.  That's

16   the one --

17              THE COURT:  This needs to come off.

18              MR. THOMAS:  Got you.

19              THE COURT:  It needs to stop at "key."

20              MR. THOMAS:  Got you.  I'm sorry.

21              THE COURT:  Now, you're going to be able to get it

22   fixed and use it, or what are we going to do?

23              MR. THOMAS:  I want to get it fixed and use it

24   right now.

25              THE COURT:  It's your time.  Let's go.
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 1                  (Bench conference concluded.)

 2                  (Pause in proceedings.)

 3                  THE COURT:  Mr. Thomas, some of us are old enough

 4   to remember when the television used to say stand by.  We

 5   are experiencing technical difficulties.

 6                  MR. THOMAS:  I -- I -- I'm old enough to remember

 7   that, too, Your Honor.

 8                  THE COURT:  And have we got them fixed, or do we

 9   not have them fixed?

10                  MR. THOMAS:  I'm trying to make sure it doesn't

11   happen again.

12                  THE COURT:  All right.  Let's proceed.

13                  MR. THOMAS:  Okay.

14   Q     (By Mr. Thomas) Behavioral integrity, Doctor?

15   A     Finally.

16   Q     (By Mr. Thomas) Behavior integrity, Doctor, if you can

17   please describe to us what you concluded with respect to

18   whether the iPad and the Apple customer devices exhibit

19   behavioral integrity.

20   A     Certainly.

21       So if we look at this passage here I'm excerpting from

22   a document called the iOS security that identifies this rule

23   about how software gets installed on iOS devices, like your

24   iPad and your iPhone.

25       And it says:  To ensure that all apps come from a known
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1   and approved source and have not been tampered with, iOS

2   requires that all executable code be signed using an

3   Apple-issued certificate.

4   And so we see here this -- this notion that in iOS,

5   it's enforcing this rule corresponding exactly to what

6   Dr. Stefik said is his rule about that software that in

7   support of usage rights has to include a digital certificate

8   in order to be installed.

9   In addition, I also cite here that the public part of a

10 SINF has in it an integrity value that also functions in the

11 same way that guarantees that the SINF also is coming from a

12 known source, in this case, Apple, that allows you to know

13 to the degree that any content could be considered software,

14 that it also is coming from a known source as well.

15 Q   And what about for the Apple Store machines, the

16 servers or the computers in the Apple Store? What did you

17 conclude with respect to whether or not those Apple servers

18 exhibit behavioral integrity?

19 A   Right. So now we're talking about those store servers,

20 those big machines that are going to be serving the usage

21 rights to the customers' processing their credit cards,

22 doing those purchases, processing all that information,

23 making sure that those -- those SINF information is coming

24 correctly.

25   Those -- you know, intuitively, we just sort of expect

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 1   them to have behavioral integrity because we're talking

 2   about the servers that are run by Apple.  But I also found

 3   evidence in the form of these depositions that I'm citing to

 4   here at the bottom, first by a Mr. Ward, and those

 5   paragraphs that I cite, as well as a Mr. Gentil at those

 6   cites that talk about first with respect to those FairPlay

 7   servers that Fair -- the FairPlay software updates involve

 8   sending code, that is software, via a messaging application

 9   using an SSL digital certificate.

10        And so that software requires a digital certificate,

11   this SSL digital certificate in order to be installed.  And,

12   likewise, with respect to the iTunes servers, that that

13   software is updated using SS keys with a digital certificate

14   as well.

15        And I'm also citing to several public documents that

16   talk about how SSL works and how SSH works to support these

17   conclusions.

18   Q    Now, you know, Doctor, that Apple and its expert,

19   Dr. Kelly, are asserting that there is no digital

20   certificate that is used to update the software on these

21   servers, and that literally, there's no behavioral integrity

22   that's occurring or no behavioral integrity at all.

23        Are you aware of that?

24   A    I am aware of that, yes, sir.

25   Q    Okay.  What is your response to that allegation that
```

 1 there's no digital certificate that's actually presented to

 2 the computers on which this updated software is going to be

 3 installed in the iTunes Store servers?

 4 A   So first I have just sort of a reaction as a computer

 5 scientist that it sort of -- it's counterintuitive that

 6 Apple's servers, which are the most important part of this

 7 equation that are doing the usage rights, controlling

 8 customer credit card numbers, all these sort of things, that

 9 Apple wouldn't want to have some mechanism to guarantee that

10 they have what would be equivalent to the behavioral

11 integrity that Dr. Stefik talks about that, you know, you

12 want to make sure that those servers are doing what they're

13 supposed to do.

14   And I have a slide that comes next that also is

15 applying this concept from the law that I learned from the

16 attorneys about how an element in a claim can be satisfied

17 under something called the Doctrine of Equivalents or DOE.

18 Q   Now, what is the Doctrine of Equivalents as you've

19 analyzed it and applied it in the context of this behavioral

20 integrity and this allegation that there really aren't

21 digital certificates assuring that the identity of the

22 possessor of the new software is known to the Apple servers

23 before they load up new software?

24 A   So in order for just one of the elements, some little

25 piece of a claim to be satisfied under this Doctrine of

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 1   Equivalents, it has to -- what you're pointing to as

 2   equivalent has to perform substantially the same function in

 3   substantially the same way to achieve substantially the same

 4   results.

 5        And then what I did in order to apply this type of

 6   analysis to the store servers for iTunes and the -- with

 7   respect to behavioral integrity for the Stefik patents is I

 8   went back to the Stefik patents, looked at what it's

 9   describing as how software is installed.

10        Why -- you know, where does that digital certificate

11   come in, what's its purpose.  Found out from this

12   description that it's all about the identity of the supplier

13   and the creator that that's what's own going on there.

14        And then I was able to, from that, determine that the

15   function that we're identifying here is installed permitted

16   repository software on a server, that the way that that's

17   done is that we need to install server software so as to

18   require a signed message attesting to the identity of the

19   possessor, including a measure of tamper resistance.

20        And then finally, the result is to only allow

21   repository software from a trusted and authenticated source

22   to be installed on a server.

23   Q    Now, sir, do you think it's likely that Apple would

24   allow software from somebody it didn't know and trust to be

25   installed on its iTunes Servers in those iTunes Stores?
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 1   A      This to me is unimaginable how a company can -- with

 2   the representation of Apple, how any company that's running

 3   an enterprise system that protects that OEM, people it

 4   knows, typically its employees, even that it trusts, that

 5   would be allowed to install software in its system.

 6   Q      Well, somebody could get in and just install rogue

 7   software into the Apple iTunes Store servers.  What effect

 8   might that have?

 9   A      See, we're talking about information that's being

10   stored on those servers that is highly valuable.  Typically,

11   we're talking about all those user names and passwords for

12   all of their customers, all of their customers, those credit

13   card numbers, information about the movies that they have

14   and all that stuff is -- is there.

15        You'd want to protect that.  So you'd want to make sure

16   that the software that's running those systems is only going

17   to ever be installed by people that you trust.

18   Q      And what did you identify that you think would at

19   least, at least qualify as an equivalent to the use of this

20   digital certificate to install software on the Apple iTunes

21   Store servers?

22   A      So if we go to the next slide, we see some excerpts

23   from a deposition by Mr. Gentil, who, in his deposition, was

24   asked about this process, about how software gets installed,

25   and he says:  And how does Apple maintain the security of
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 1  the build?
 2       So this is now talking about a software builder who's
 3  building software that then would be going out to the iTunes
 4  Store servers and how that would work.  And he says it's
 5  going to the net app filer, this device that then would be
 6  the last hop, if you will, for how the software gets
 7  installed in those iTunes Store servers.
 8       And he answered, go with the flow, I think.  It's just
 9  a simple copy from the machine that built and compiled will
10  just make a compile -- a copy to the filer that is shared
11  through all the machines.  That's how it's done.
12       And then he was asked:  And is that within the Apple
13  VPN?
14       And he said:  No.  It's inside the Apple secure zone.
15       So everything can be clear, because you cannot get in
16  unless you have the VPN access or an IP known as being safe,
17  and you have your SSH key.  So that's how it's secured.
18       And so when I saw that deposition testimony, plus, as I
19  cited to earlier, that public documents about how that SSH
20  protocol worked, that stands for secure shell, how those
21  keys work, I understood that that was equivalent to
22  requiring a digital certificate in order for software to be
23  installed, because that protocol involves a signed digital
24  message attesting to the identity of the possessor, which is
25  the Court's definition for digital certificate, and in this
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 1   case, the possessor is that software builder, who is doing

 2   this install.

 3        And that, together with another system called SVN, with

 4   those SSH keys, is giving the equivalent of that requirement

 5   of requiring the software include a digital certificate in

 6   order to be installed on these servers.

 7   Q    So, Dr. Goodrich, what was your overall conclusion as

 8   to whether or not the forward iTunes devices that it sells

 9   to its customers and the iTunes Store servers establish and

10   perform behavioral integrity in the enforce inspect of usage

11   rights?

12   A    I concluded that, indeed, both the customer devices and

13   the service displayed behavioral integrity in the support of

14   usage rights.

15             THE COURT:  All right.  We're going to stop at

16   this point, ladies and gentlemen.  It's about 22 minutes

17   after 5:00.  And the Court's aware that at least two of our

18   jurors have about a 60-mile drive to and from home every

19   day.  We'll pick up with the remainder of this direct

20   examination in the morning.

21             I'm going to ask you to leave your juror notebooks

22   on the table as you exit the courthouse.

23             I remind you again, don't discuss the case with

24   anyone, especially when you get home tonight.  You may be

25   tempted.  Just say it's all my fault.  That Judge told you
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 1  not to say a word.  Don't do it.  Don't discuss the case

 2  with anyone.  Don't discuss it with yourselves.  Follow my

 3  other instructions.

 4           I'd like to have you back in the morning -- I told

 5  you we'd start at 8:30 this morning, and we were late

 6  getting started.  We'll do better in the morning, I promise.

 7  If you'll be back ready to go by 8:30, we'll try to start at

 8  that time.

 9           With those instructions, ladies and gentlemen,

10  you're excused for the evening.

11           COURT SECURITY OFFICER:  All rise for the jury.

12           (Jury out.)

13           THE COURT:  All right.  Be seated, please.

14           Dr. Goodrich, you can have a seat in the audience.

15           THE WITNESS:  Thank you, Your Honor.

16           May I leave these exhibits here?

17           THE COURT:  That will be fine.

18           Counsel, tell me why some of you seem intent on

19  reading every exhibit number on the bottom of every slide

20  into the record when I've made it clear that before I bring

21  the jury in each morning, we're going to set aside time so

22  that you can read into the record the items from the list of

23  pre-admitted exhibits that you've used before?

24           Some are doing it.  Some aren't doing it.  We need

25  to be consistent.  We need to be on the same page.  And I
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 1   don't care what your paralegal may say to you, Mr. Thomas.

 2   I want to get this straight.

 3            MR. THOMAS:  My understanding, Your Honor, before

 4   this trial and the other trials I've done in front of you

 5   is, if we didn't read it into the record, it wouldn't get

 6   admitted the following morning.

 7            Had I known that your practice would be as long as

 8   it was identified on the slide that was shown to the jury

 9   and that the witness talked about, we could get them

10   admitted into the record the following day, I wouldn't be

11   doing it, but I -- I -- out of an abundance of caution

12   today, I was doing it that way.

13            And I do recall I've done it that way in your

14   courtroom before, Your Honor, although believe me, it's a

15   slog.  I don't want to do it.

16            So as long as we all know that as long as they're

17   printed there and the witness has discussed the slide, I

18   don't need to identify them in order for them to get

19   admitted the following morning, I'm good to go.

20            THE COURT:  Well, you know, the Court's practice

21   is to consider and pre-admit the exhibits, which we've done

22   in this case, so that you're then free to use them without a

23   predicate.

24            My preference, and unless somebody can convince me

25   otherwise, my practice has been not to take the time to read
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 1  all those numbers that I don't think anybody is paying
 2  attention to, except the court reporter, during the course
 3  of the examination, and then the next morning have someone
 4  from each side step to the microphone, read into record the
 5  pre-admitted exhibits that were used in yesterday's -- the
 6  preceding day's portion of the trial.
 7          Now, if there's a disagreement about what's been
 8  used and what hasn't been used, we can get into that, but
 9  that rarely comes up.  And you're going to use exhibits by
10  way of slides that you prepared, just like I assume the
11  Defendant's going to use their exhibits by way of slides
12  they've prepared.
13          So unless there's some reason to do it both ways,
14  I'd much prefer we do it one way and not both ways.
15          Mr. Pritikin, do you have an observation?
16          MR. PRITIKIN:  I have an observation, Your Honor.
17  In our view, these documents, where they are listed at the
18  bottoms of these slides, really are not being published to
19  the jury.
20          We have no problem, obviously, with the
21  pre-admitted documents going to the jury and being part of
22  the official record if -- if they're published to the jury
23  in the course of the trial.  But what we're having here is a
24  slide and some of them are just the most barest of cartoons,
25  and then we'll have a laundry list of sometimes as many -- I
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 1   haven't counted them -- many, many documents there.

 2             And in our view, those are not being published to

 3   the jury, and we would object to their being on a list

 4   tomorrow morning as documents that ought to be officially

 5   included in the record.

 6             THE COURT:  So you're going to tell me that you

 7   don't intend during your case-in-chief to use a composite

 8   slide that pulls together information from various separate

 9   exhibits, that you're going to publish expressly each of

10   those separate exhibits?

11             Are you telling me that?  Because you won't cover

12   as much ground nearly as fast if you do it that way.

13             MR. PRITIKIN:  We're going to use demonstratives,

14   but, honestly, Your Honor, we had not contemplated just

15   putting laundry lists of documents on there.  The

16   demonstratives are not -- are not in evidence.  They're just

17   demonstratives.  The underlying documents are.  And the ones

18   that we think are important and that ought to be in the

19   official record, we intend to publish to the jury.

20             THE COURT:  Well, that's why I want to get to the

21   bottom of this issue.

22             Mr. Baxter?

23             MR. BAXTER:  Your Honor, that's why I told

24   Mr. Thomas to read those numbers out because they had told

25   us they were going to object, and I don't want to get caught
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 1   short-footed on that.

 2           But the witness can clearly say what documents he

 3   looked at to form his opinion and read those numbers out.

 4   He doesn't have to show them to the jury or flash them up on

 5   the screen.  That's silly.  He can say what documents I

 6   relied on to get that and those documents are pre-admitted

 7   and that's, in fact, how you publish them to the jury.

 8   That's been done here for eons.

 9           THE COURT:  Well, here's what I'm going to do:

10   I'm going to direct both sides to meet and confer about this

11   issue, and I'll take it up first thing in the morning.  I

12   don't intend -- I don't intend to put the parties to the

13   physical task of holding up the individual pieces of paper

14   to meet the requirement that they've been published to the

15   jury.

16           But I think that it would be beneficial for both

17   sides to discuss this overnight.  We need to get on the same

18   page.  We need to get this straight now, not four, five days

19   from now.

20           The other thing I want to talk to you about is, if

21   you're planning to do something with a witness other than

22   ask the witness questions from the podium, then I want to

23   make sure that you've disclosed that to the other side, and

24   I want to make sure that you've disclosed it to the Court.

25           I had no idea what Dr. Goodrich was going to do
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 1   when he got up with that iPad, and I don't like that

 2   position. I gathered that Mr. Pritikin didn't understand

 3   what was going to happen because he was on his feet

 4   objecting to it.

 5   There's no reason not to disclose demonstrations

 6   or anything other than a verbal question and answer process.

 7   If we're going to have more of those, there's nothing wrong

 8   with them, but they need to be disclosed in advance. And if

 9   there's an issue, that issue needs to be taken up in

10   advance, not during the time that it actually comes about

11   during the trial.

12   MR. THOMAS: I apologize, Your Honor. I thought I

13   had raised it in chambers.

14   THE COURT: Well, you mentioned it briefly, and I

15   heard it in chambers, but I didn't have a clue how it was

16   actually going to play out physically in the courtroom.

17   MR. THOMAS: I will be absolutely more complete in

18   my disclosures, Your Honor.

19   THE COURT: Third thing is, counsel, if you have

20   disputes overnight, as you did last night, the Court needs

21   more detail when I get your emails explaining where you have

22   disputes and problems, because quite honestly, part of the

23   reason that we used more time this morning in working

24   through the disputed demonstratives is I really didn't have

25   a clue what your arguments were about.

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 1              I mean, they're one sentence or half of a sentence
 2  statements in an email.  And that may be because you had so
 3  many of them.  And we need to -- we need to find a way to
 4  not use as much time or I'm going to have -- start having
 5  you all come in at 6:30 instead of 7:30 and we get these out
 6  of the way, because I'm not going to make this jury wait in
 7  the jury room half an hour after when I told them we were
 8  going to start again.
 9              And I'm not going to make them come back
10  30 minutes at the end of lunch when they could have had an
11  hour-and-a-half because we can't get disputes and
12  disagreements handled.
13              Both sides need to do a better job at that, and
14  both sides need to find a way to minimize these disputes.
15  We can't nitpick each other all the way through this entire
16  trial.
17              I'm not telling you you won't have disagreements,
18  and some of them won't be substantive, but I'm -- I will
19  tell you this:  To the extent it takes more time, that's
20  going to come out of your lunch hours or your free time.
21  It's not going to come out of this jury's time.  I'm not
22  going to make them cool their heels, because instead of two
23  or three disagreements, we've got 25 or 30 disagreements.
24              All right.  Are there any questions before we
25  recess for the evening?  We'll continue with Dr. Goodrich's
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 1   direct in the morning.

 2               MR. BAXTER:  No, Your Honor.

 3               THE COURT:  Anything from the Defendant?

 4               MR. PRITIKIN:  No, sir.

 5               THE COURT:  We stand in recess until tomorrow

 6   morning.

 7               COURT SECURITY OFFICER:  All rise.

 8               (Court adjourned.)

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11

12                         CERTIFICATION

13

14          I HEREBY CERTIFY that the foregoing is a correct

15   transcript from the stenographic notes of the proceedings in

16   the above-entitled matter to the best of my ability.

17

18

19   /S/Shelly Holmes                 11/12/15
     SHELLY HOLMES, CSR, TCRR         Date
20   Official Court Reporter
     State of Texas No. 7804
21   Expiration Date:  12/31/16

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